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## ORIGINAL ARTICLES

### TEACHING THE PRACTICE OF MEDICINE

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#### I

In the sixties and seventies of the last century, the practice of medicine did not seem to some medical students a very inviting calling. There was for the curious a morbid interest in the dissecting room; lectures on physiology might be thought entertaining; the demonstration of pathological specimens seemed to explain the phenomena of dissolution; there was surprise at the experience of the new born in his hazardous entrance into this vale of tears, as described in midwifery lectures; the surgical amphitheater offered some entertainment akin to that of the prize ring. But lectures upon the theory of medicine were dull, and the hospital wards revealed an unpleasant side of humanity. In treatment, the mixture of empiricism, tradition, and credulity was confusing. Venesection and extreme purging had been rejected, the little pill of diluted potency had become fashionable. Even by the learned physicians sarsaparilla was thought to be a blood purifier, and asafoetida a remedy for disarranged nerves. It was thought that a weakened constitution could be strengthened by the use of strong drinks in moderation. Though a wise physician no longer wore the wig of the medical man of Moliere's time, he had not entirely outgrown Paracelsus. Some affected black broadcloth and a white neck-tie. It was a question how much of delusion there remained in the mystery of the practice of medicine. The remark of the scoffer might be true that there was too much pretense, ignorance and humbug in medical practice. Like the two augurs of ancient Rome, physicians could laugh as they entertained each other with tales of their success in fooling gullible humanity. The doctor was still properly regarded as a leech and thaumaturge.

However, the medical student was not fully aware of the facts and to the doubter came hopes of the new medical learning from Germany, that land of profound research, where the superstitious slavish adherence to the dicta of Galen and Hippocrates and the aphorisms of wisecracks had been replaced by autopsy records, microscopical study and the laboratory. In the new triumphant German Empire adequately

paid clinical professors had replaced the rhetorical teacher of older times. The great reformer in pathology, Virchow, had dispelled the delusive error of the antiquated humoral pathology, which had sanctioned phlebotomy and many therapeutic absurdities. Pettenkofer was recreating hygiene, Ludwig had made physiology a true science, Hoppe Seiler and the chemists were placing pharmacology on a sounder basis. These were experts in special knowledge offering new light in the hitherto dark places of treatment.

The outlook, however, was not then encouraging for the improvement of medical education or for the advancement of the young medical aspirant. Educational opportunities were held in the hands of professors of the type who were not in favor of medical science, and hospital positions were assigned to those who had been trained in these hospitals. The would-be scientist, with ideas of precision in the medical art, felt little sympathy with the ordinary type of successful practitioner who spent his days driving from house to house, busied from morning to night with the trivial complaints of overfed valetudinarians, or ill-fed children. The plausible, fashionable doctor, knowing little pathology, but with the gift for explicit statement of generalities, needed little science. Men of this caliber were not infrequently placed in charge of hospital services and even made professors of medicine. There was as great a need for improvement of medical practice as for reform in medical education.

It would be difficult to exaggerate the spirit of hopeful enthusiasm aroused in the little band of American medical students gathered in the medical centers of Germany and Austria at that time. At last they were at the fountain head which promised incalculable benefit to mankind. There could be no worthier work than that of the laboratory investigator in the medical sciences. The research worker was the successor of the student of old who brought light to an ignorant world by his devoted work over the palimpsest. All that seemed needful was a living wage, a laboratory desk, pathological material, and academic freedom. These researches should be the foundation of medical education. Instruction should be based on definite knowl-

edge, and not, as in the United States, on lectures by amateur scientists or popular practitioners.

In actual practice, however, the common sense American family doctor seemed more helpful than most of the learned German professors. The hospitals appeared to be administered more for study by the doctors in charge than for the individual care of the sick man. It was the disease that was under scrutiny, not Hans or Gretchen. It is curious to recall in contrast, the types of successful practitioners fifty and sixty years ago who enjoyed popular reputations in our leading cities. There was the energetic adviser of many, whose one-horse buggy was to be seen at all hours of the day in front of the doors of the most substantial mansions. He was considered a surgeon, for he directed a surgical service for two months in the year. However, he advised against active surgery of his private patients, and was therefore considered a man of sound judgment. There was his rival, a much liked homeopath, whose buggy was as constantly seen in the well-to-do quarter of the city. He was a strict high dilutionist and never gave powerful drugs in poisonous doses. Both the homeopath and allopath were dictatorial to young ladies and irresolute fashionable women, and were regarded as men of strong character.

There was the man of pleasant quiet manners who agreed with everybody and whose chief diagnosis was gout. He knew nothing of the disease except what the text-books contained, but his opinion was readily accepted by his patients, who were largely of the indolent class. His favorite remedy was tincture of digitalis with a little guaiacum in small doses.

There was the active young practitioner who was a favorite with the mothers of children, for his medicines were always sweet, palatable, and easily administered. He gave the impression of a man of wide medical knowledge. His patients expressed much sympathy for him as he was so overworked in the winter by constant demands on his time that he was obliged to refresh himself by many summer months in European pleasure resorts. The dieting and medication prescribed by physicians of this class were based more upon individual opinion than upon accurate knowledge. Why cream and eucroea should be regarded as a useful tonic, and why cold sausage should be fed to neurasthenic ladies were questions which were explained only by the authoritative statements of a doctor of large practice. Carefully compounded drugs in a well flavored menstruum capable of relieving all sorts of symptoms were favorite remedies of one physician, while medication was generally discarded by another. Questioning patients were convinced by the doctor's statement that his successful experience

justified such measures, which might fail if less wisely used.

The inexperienced, high-minded, and well-educated young physician, finding the leading practising doctors of his city to be men of this caliber, might well have thought that a reform was needed. The practice of medicine was not a career open to talent, but to the superficially "smart."

There were other medical men of high repute as consultants. One was thought to be able to make diagnoses by exclusion. He was an industrious man who was classified by one of his colleagues as knowing he was good and thinking he was wise. He was eminently respectable, having "gone to the good" early in his life, to quote Julia Ward Howe's witticism. As a practitioner, he was of little service, for he was not competent to prescribe for the simpler maladies. There was also a leading consultant, of grave and wise demeanor. His manner of speech was so profound that no one questioned whether behind the words there was a modicum of truth. His appearance was as solemn as a caput mortuum, and he brought no cheer to the sick room. He seemed the Apostle of Doom, an embodied Azrael, stern as fate and unsympathetic as a glacier. There were, however, a few physicians of high character, worthy of the esteem of the profession and the public as expressed in the following extract from Robert Louis Stevenson's writings.

"There are men and classes of men that stand above the common herd; the soldier, the sailor, and the shepherd not infrequently; the artist rarely; rarer still, the clergyman; the physician almost as a rule. He is the flower (such as it is) of our civilization; and when that stage of man is done with, and only remembered to be marvelled at in history, he will be thought to have shared as little as any in the defects of the period, and most notably exhibited the virtues of the race. Generosity he has, such as is possible to those who practice an art, never to those who drive a trade; discretion, tested by a hundred secrets; tact, tried in a thousand embarrassments; and what are more important, Hereulean cheerfulness and courage. So it is that he brings air and cheer into the sickroom, and often enough, though not so often as he wishes, brings healing."

There is another tribute, by an unknown writer in the *Boston Transcript*, which is well worth quoting:

"The doctor is altogether a special kind of a person. His illusions are few. His inside information is enormous, and if, now and then, he wears a superior smile, forgive him. He has probably just heard some remark which he knows to be fatuous or hypocritical. Again, his jokes are likely to be a bit technical, and his view of life materialistic. But if he has a brand of idealism, you can put your trust in it,



for he has learned it in a hard school, and it is genuine. He has faced the worst, and can still believe the best. And if he has a religion, it will be worth coming at, for he has wrested it out of the actual battles of good and evil in our common life seen at close range.

"The lawyer we take into our confidence when we get good and ready; the clergyman we admit to parlor and dining room; but the doctor goes into bedroom unannounced. He goes in at a time when the house, temporal and spiritual, has not been set to rights for his reception, but if what he sees there surprises him, he seldom lets it be known. In the healing of bodies he has opportunities for healing souls which could never come to a priest, and with which many a priest could not deal. He is the lay father-confessor, regardless of creed. In cities, his club-ability is famous. He always fits. And clubs are justly full of him. Any club member is always safe in replying to any other's salutation, 'Good evening, Doctor.' He is a safe man on committees; he can turn his hand to any public business, and if left alone, discharges it creditably. He knows more psychology in five minutes than the philosopher in a week, and he is withal the least emotional of men. The peculiar thing about him is that while fighting his grim and silent battle with death without the applause of a crowd, often without pay, and sometimes without even gratitude, he seems superior to all these considerations. He is responding to a higher sort of *noblesse oblige* which is almost unintelligible to the average man hot for the average prizes. Compared with the impetuosity of military men, the ecstasies of religious leaders, and the silent fortitude of starving artists, the frozen enthusiasm of the doctor is a very curious manifestation. It may be something in the training he gets, for, no matter what the youngster may have been, if he has anything in him it will go hard if his practice as a physician does not bring it out. And to him belongs the final reward of service, which is the increased opportunity for service."

Nothing in the whole range of the history of medicine can compare in human interest with the incident in the life of Pasteur (vividly portrayed in Guirry's remarkable dramatic production) when he assumed the tremendous responsibility of human experimentation upon a child. His long experience in study with animals was his warrant, and the result was his justification, saving a human life from a fearful death. He accomplished even more than he could have imagined. He transformed the whole idea of the practice of medicine. As the result of his teaching, the physician could no longer remain merely the kind friend of the sick, the observer of the natural history of disease. His art became more definitely curative. He was to deal with specifics not with al-

leviants or roborificients. He was to be in fact a miracle worker mightier than any in the superstitious past. The sick, in the new science, suffer from toxins needing antidotes. It is the function of the modern scientific doctor to administer the proper corrective.

What the progress of medical practice would have been if science had remained where Virchow left it is a question. When the brilliant imagination of the French chemist announced his theory of the germ causation of disease and that rabies could be controlled and checked by the direct intervention of the scientifically equipped physician; when, in addition, it was seen that this was only a beginning of the future conquest in the warfare against disease, scientific medicine at once was given an incalculable importance in the minds of far seeing men. The teaching and experience of the practical Scotch surgeon, Lister, adopting and applying the ideas of Pasteur, served as an immediate demonstration that the healing art had made its most serviceable advance in centuries. The cellular pathology with its microscopic pathological findings has cleared away from the science of medicine the old pathology, relic of the demonological superstition and its later mediaeval tradition; but the cell pathologist was of little direct aid to the therapist, though of great help to the diagnostician. The idea of the self-limitation of disease, the *laissez faire* agnosticism of the common sense school of the early 19th century, was not controverted by the pathologists of the middle of that century, who gave little help to those engaged in aiding the sick by the practice of medicine. To these the new science came with the greatest possible promise. A real enemy had been found which could be fought successfully in the place of an imaginary constitutional vice. Eliot, Warren, Bowditch, Welch, Shattuck, and Billings, as well as many others found a ready argument in their appeals to the sagacious American financiers, for the foundation of medical research laboratories, institutes and medical schools. The response was magnificent; Mr. Morgan, who in his patronage of art had recalled the days of the Italian princes, added a new lustre to his munificence. The Rockefeller gifts can find no comparison in their far reaching beneficence. In their appreciation of values above immediate material advantage, these donors can be compared with the faithful who in the twelfth and thirteenth centuries built chapels, cathedrals, and shrines for the salvation of mankind. The names of Johns Hopkins and Peter and Robert Brigham will stand for benevolence even more conspicuously than medieval founders of the famous London hospitals.

The findings of medical science in the latter part of the last century have aided the practice of medicine in every civilized part of the globe

to a degree not readily appreciated. But this science-given power increases the practitioner's responsibility. The doctor can no longer be content to rely on his own personal experience and judgment. If he is to deserve the confidence of his following, he must keep in touch with all advances. The public also has become more exacting and expects definite relief. It is no longer satisfied with prescriptions and pleasant words.

The recent developments in medicine brought forward the needs of increased research. Laboratories were needed in close connection not only with medical schools but also with hospitals. Medical schools became research institutes; and the greater interest in research may, to a certain extent, divert their interest from the duty of training family practitioners.

## II

The transformation of the medical practitioner from the doctor of the last century with his little scientific knowledge into the miracle worker of today brings up the question of the success of our medical schools in their task of fitting students for practice. The former proprietary schools were defective and deserved to be eliminated. But before consigning these schools to the limbo of dead forgotten things, it is well to point out their redeeming features for the light they throw on possible weaknesses in present methods. It would be a mistake to believe that the old medical education was necessarily poor, because it was conducted by doctors whose chief interest was in practice, and who gave lectures without laboratory training. The prominent didactic lecturers of the old schools had a practical knowledge of their subject. They were painstaking and avoided the superfluous. They studied the art of lecturing, and were often gifted speakers. The *ipsissima verba* of the master was stimulating and not easily forgotten. There was a great demand for practising physicians. There was little difficulty in determining what they should be taught. They should know enough anatomy for sound practical surgery; enough physiology to avoid grave errors in advice as to feeding and faulty living; enough chemistry to shun using incompatibles in prescribing and the sensible use of a limited number of effective medicaments. Meddlesome midwifery was to be avoided with sufficient experience to estimate the strength of the patient and enough knowledge of pathology to enable the physician to make a reasonably accurate diagnosis. Good text-books, intelligent instruction by men of good sense and experience with dissecting room facilities and some clinical opportunities constituted the basis for the medical school of the period.

But there was one responsibility which was especially important at that period, namely, the

cultivation of high professional probity. The charlatan is always a menace in every community. In the United States, a land of individualism of the most advanced type, absolute freedom for every man in his choice of looking after himself and his health was regarded an inalienable right. There were no medical registration laws. The only protection which was afforded to the public was from a relatively small group of educated physicians, well known for honesty and rectitude. A diploma given by the best educational institutions must be a guarantee of good standing and honest purpose. The object of a medical faculty was not to teach as much as the student could stand, but to teach well such facts as were then essential.

The modern medical educator would never be contented with the limited aims of the faculty of fifty or more years ago. Every physician today regards himself as a scientific observer. Facts should not escape him and his mind must be so trained that his observations may be correlated in considering some of the different groups of biological processes which are termed diseases. He must never generalize from insufficient data. Guesswork is unscientific. The object of the years of medical school training should be to free the medical student from any habit of hasty conclusions. Virchow was undoubtedly right in claiming that there is no more fruitful source of error than the practice of forming general impressions. The amount of knowledge which it is essential for the student to know is so great that only men of more than usual mental capacity and proper training should attempt to enter the medical profession. The capacity of the student must be tried by stiff courses and strict examinations.

It is now considered a mistake to regard hospitals chiefly as establishments for the care of the ailing; nurses or attendants can devote themselves to that service. From the modern point of view hospitals are laboratories for the observation of disease. Those in medical charge should be selected for their ability in this capacity. However, no one will claim that this view of medical education is entirely adequate. The object of a medical school is primarily to train men for the practice of medicine and the chief purpose of a hospital is to relieve and cure the sick. An engineering school which taught only advanced research in Physics would fail in its responsibility. There is, moreover, an urgent demand for qualified general practitioners and family doctors devoted to the personal interest of their patient.

It appears, however, that in many respects modern medical education, especially in America, is diverting the student more than is desirable from the best training for family practice. There are several reasons which appear

to justify this opinion. In the modern, large medical school the organization and conduct of medical education is largely in the hands of specialists. The full-time professor is appointed for achievements in investigations in his special department rather than for breadth of experience, teaching ability, or success as a practitioner of medicine. The student passes from the instruction of one specialist to that of another, each unconsciously or purposely aiming to develop interest in his own special branch. There is, in many medical faculties, a lack of coordination and proper perspective from the point of view of a physician trained in practice.

The practitioner of medicine needs to consider the idiosyncrasies of the patient fully as much as the natural history of his disease. For this the fundamental medical scientist or the chief of a hospital service has often little preparation, and is unable to instruct the student properly or even to give the student the requisite mental attitude. A young doctor trained in investigation may be confused in meeting the emergency of an acutely suffering patient. His scientific theories are not yet convictions, and he hesitates in offering relief.

The multiplication of teaching in many separate subjects has increased the length of time required for medical education to an extent which is a menace to the student's energy. A period of six to eight years after graduation from college cannot fail to be injurious to the initiative of many medical students. The increased length of medical education adds greatly to its cost. A student who earns nothing and needs outside support for a number of years is a financial burden upon the community. He seeks to recoup himself for his non-earning years by later financial success, and for this he expects adequate fees. Longer medical education creates a greater financial tax upon the student, and as all taxes fall ultimately upon the consumer, the public is obliged to pay more for medical treatment. This seems to explain a fact which is noticeable to most older physicians. There appears to be a spirit of commercialization in the practice of medicine more evident today than formerly. This is especially true in surgery and in the specialties where success may bring large returns. Specialists have therefore become more attractive to the young medical man, though they are more narrowing in the scope of the experience with human nature. It sometimes seems also that commercialism, specialization, long hospital experience, and scientific curiosity have developed in the medical profession a tendency to what may be termed a dehumanized attitude of mind.

There is abundant evidence of much dissatisfaction with the present condition of medical

education in this country. This is seen in many addresses and paper at Medical Association meetings. Some of this may be due to a narrow consideration of medical science, but it would be unwise to disregard all the criticism presented. Much weight may be given to the views of foreign expert opinion when expressed by competent observers who have carefully examined the American educational methods in our leading medical schools. It has been frequently stated by such critics that in the medical schools of the United States there is much rigidity in methods more adapted to high school instruction, and that there would be an advantage in greater elasticity; that the summer vacations are too long and much valuable time is lost in the four years' course; that the courses of instruction are too much in the hands of specialists without a sufficiently broad plan for the needs of the young beginner in the practice of medicine; that an undue emphasis is laid on research in the mind of the beginning student before he is prepared by a good acquaintance with the problems he is to meet in medical practice.

The medical educator, in his zeal for the inspiration of fresh knowledge beneficial to the student no less than to himself, should not forget that the main purpose of a medical school is not primarily to produce research students but to train young practitioners of medicine. Nor should he forget that he is educating for a high career. Was it an evidence of an excess of scientific zeal or of mental myopia which prompted a physician in charge of a great medical research foundation to speak of the practice of medicine as an ignoble calling? It is fortunate for the community that this scientist will not find many even among his laboratory colleagues who will agree with him.

On the other hand, almost equally in error was the distinguished English physician who denounced one of the most energetic of American medical reformers as having exerted a most pernicious influence upon medical education because the latter emphasized the importance of scientific laboratory methods in the curriculum. If this English physician had been fully acquainted with the condition of our medical schools fifty or more years ago, he would have realized the urgent need of the training in precision which the laboratory gives. A fairer criticism would be that this emphasis has gone too far. Perhaps the zealous young American physician of the last century, who in the special courses and research opportunities of Europe, learned to supplement his imperfect medical education in America exaggerated the importance of research methods. If the result is that our medical schools have been brought too much under the domination of specialists rather than of broad-thinking and

widely experienced physicians, the outcome is most unfortunate.

In this connection a comparative study of English and American medical education is of interest. Colonial America followed the excellent English method of medical apprenticeship which carried with it a tradition of good sense and high character. But the meagre clinical facilities of a community emerging from the stage of the pioneer gave small opportunity for broad education. The mind of the American after the Revolutionary war was turned to France and the spirit of inquiry extended to the Continent. Later German educational methods were swallowed whole in America to the exclusion of English traditions which were regarded as not sufficiently progressive. Considering the rapid revolution which followed, it is a question today whether a more gradual advance would not have been the better course.

It would be unwise to dismiss these criticisms summarily with a statement that the American medical educational system is adapted to American needs which differ from those to be met in Great Britain with its more compact civilization. A highly educated English physician, who after the war was appointed to a position on the Faculty of one of the leading medical schools in this country, gave his opinion of American medical education in a personal conversation. He finds excellent opportunities here for post-graduate courses, but he thinks that the English medical student receives better training in Great Britain.

The subject should be carefully examined, for if there are imperfections in our medical education today, the fault cannot lie, as formerly, in the limited financial support of our medical schools.

In the past the doctor was often the object of some contempt, and medical education was the subject of no little censure. Today the doctor is highly regarded, but medical education is sharply criticised. Formerly it was said that medical education was in the hands of a small group of unscientific doctors who, as practitioners, used their professorships for their own personal advantage. It is said today that medical education is controlled too much by scientific specialists, more interested in advancing research than in giving the instruction needed by the family physician. Formerly there was no lack of doctors, but there were many ignorant of medical science. Today there is a scarcity of general practitioners especially in the rural districts. Medical educational reform was needed in the last century to give scientific medicine its proper place in the curriculum. Today it is claimed that measures are needed to prevent the crowding out of teachers experienced in general practice.

There is also unquestionably a need for a bet-

ter economy of the student's time. The several months of summer vacation should be systematically used in teaching students. There is no lack of clinical material from the middle of June to the middle of September. Also better premedical teaching should be organized in our colleges. It is important that research instruction should be administered under a different committee from that directing general medical education. Medical teaching methods should be improved; schools should not remain in the condition of scholastic rigidity which was characteristic of college education fifty years ago. As the registration laws require hospital service, this should be organized to give more thorough training and less routine drudgery.

It has been claimed that as the science of medicine has made such an advance, there will in the future be no demand for the family practitioner. Such a plea can hardly be sustained. Children are to be born and their proper nursing needs careful personal supervision. Men are to die and their last days need to be made comfortable. All are under the threat of illness much of which needs watching even more than scientific classification. Although Science has given the modern physician a better armamentarium than was given to his predecessor, still he needs an equally strong personality. The doctor should not only classify the ailment; he should also persuade the patient to take such measures as offer the best chance of relief, and this latter is often his most difficult task. For this he must be able to secure the thorough trust and confidence of his patient. The sick man needs a friend. He should look upon his doctor as his best friend. To be this is to practice medicine. To fail in this, no matter with what acquired skill, is to become a tradesman. Lessons in this art come not from the hospital, laboratory or amphitheater, but from the example and teachings of the true physician.

#### CHILD WORKERS IN TENEMENT HOMES

CHILD LABOR was found to be prevalent in nearly a quarter of the 15,000 houses licensed to engage in home work in New York State, according to the 1924 report of the New York State Commission to Examine Laws Relating to Child Welfare.

The commission made an extensive study during 1924 of tenement manufacturing. Its report states, "Children of tender years—many of them under 10 years of age—are commonly permitted or required to engage in this work." The commission recommended to the legislature as a result of its study that the list of trades in which homework is prohibited should be extended and that eventually homework should be prohibited.—*Children's Bureau Bulletin*.



## NEW ENGLAND SURGICAL SOCIETY

Session of 1924 at Hartford, Conn., September 26 and 27

### SURGICAL TREATMENT OF EXSTROPHY OF THE BLADDER, WITH REPORT OF A CASE

BY LINCOLN DAVIS, M. D.

T. W. L., hospital No. E. S. 256934, a young man of seventeen years entered the Massachusetts General Hospital on June 23, 1923, with the diagnosis of exstrophy of the bladder, recommended by Dr. A. C. England of Pittsfield, Massachusetts.

The family history was negative. The previous history, except for the defect for which he came to the hospital, was without significance. He was an only child, of a rather nervous temperament, with some difficulty in speech, stuttering. He had had whooping cough and measles in childhood. Since birth he presented the typical picture of exstrophy of the bladder with urinary incontinence and herniation of the bladder. He had considerable irritation around the genitalia as a result of urinary leakage and at times was driven almost mad with it. In spite of this handicap he had been able to work, driving a grocery wagon. He had nocturnal emissions and erections of the penis.

On physical examination he presented the general appearance of a healthy boy. Heart and lungs were negative. There was a typical exstrophy of the bladder with complete epispadias of a rudimentary penis. The testicles were well developed. There was absence of the pubic bone, with bony prominences marking the terminations of the pubic arch in both groins. The X-ray confirmed the defect of the pubic arch. The scrotum was inflamed and excoriated from urinary irritation. The urine collected by hermetically sealing a rubber tube to the exstrophied bladder showed an absence of albumin and sugar. The phenolphthalein test of renal function was 45% in one hour. The Wassermann test was negative. N. P. N. 314 mg. per 100 cc. Blood urea nitrogen 10 mg. per 100 c.c.

On June 30 the right ureter was implanted into the rectum by the Coffey-Mayo technique. An incision was made at the outer border of the right rectus muscle and the peritoneal cavity opened. The right ureter was tied off about one inch from the bladder and severed, the proximal segment was freed for a distance of about three inches, care being taken to preserve the blood vessels and the vas. The ureter was then inserted into the upper rectum lying just under the mucosa for a distance of somewhat over an inch. The rectum was sutured to the right lateral wall of the pelvis to prevent kinking of the ureter. A patch of omentum was sutured about the site of the anastomosis. The

wound was closed without drainage. A rectal tube was fastened in the rectum. The patient reacted well from the operation. In the first twenty-four hours about fifty-one ounces of bloody fluid drained from the rectal tube. The drainage ceased entirely on the second day and no further evidence of urinary drainage into the rectum appeared until the eighth day, when a considerable amount suddenly appeared and continued thereafter. The patient's general condition remained excellent and the wound healed except for a little superficial maceration.

Twenty days after the first operation, on July 19, 1923, the left ureter was implanted into the sigmoid. The peritoneal cavity was entered by a left rectus retracting incision. There were a surprising number of intestinal adhesions in the pelvis which required separation. The left ureter was isolated, ligated and severed one inch from the bladder, the proximal segment was dissected up beyond the brim of the pelvis and brought through the mesentery of the sigmoid and implanted into the latter without tension or kinking, by the same technique as used before. No omentum could be found to cover the suture line. A cigarette drain was placed to the pelvis.

He made a good recovery from the operation, there was a slight serous discharge from the wound, but no evidence of urinary leakage. There was a definite increase in the amount of fluid discharged from the rectum. He soon acquired very good rectal control, holding 5-6 ounces from two to three hours. On the 12th day there was a chill and the temperature rose to 101. The temperature remained moderately elevated for one week and slight urinary leakage occurred at this time in the wound along the drainage tract. This ceased after a week. The urine passed per rectum appeared quite clear, and sphincteric control was good. The wound healed slowly. On August 18 he was discharged from the hospital to his home, to return later for extirpation of the bladder and repair of the suprapubic hernia.

On September 21, 1923, he reentered the hospital. His general condition had improved materially. He had gained weight, his nervousness had diminished and life had become a pleasure to him. He was an enthusiastic boy. He had good control of the anal sphincter, holding his urine four hours or more. Occasionally, when fatigued, urine escaped from the rec-



tum during sleep. The phenolphthalein renal function test was 45-50% in two hours.

On September 24, 1923, the third operation was performed. An incision was made at the muco-cutaneous junction of the exstrophied bladder; the latter, including both ureteral stumps, was removed. There was considerable bleeding. The defect in the abdominal wall was closed by bringing down flaps of the anterior sheaths of both recti muscles which were overlapped and united below to the strong fascia which replaced the pubic arch. A rubber drain was placed in the cavity from which the bladder had been removed. The epispadias was not operated on. There was no post-operative reaction. The wound healed per primam. The patient was discharged on October 17, 1923, in excellent condition.

A letter from the patient, under date of July 29, 1924, states that his general health is fair and that he is working hard. He can retain his urine four to five hours during the day time, not quite so long at night. If he sleeps very soundly there is sometimes leakage at night. There is no irritation of the rectum. He has had several attacks of severe pain in the left kidney region accompanied with vomiting. These attacks last a day or so and then clear up entirely. This, of course, is suggestive of an ascending infection of the kidney, the bane of all ureteral implantation operations. He has been urged to return to the hospital for further study but has not yet done so. It is too early to judge of the result of operation in this case. At the end of six months it seemed a brilliant success, now at the end of a year the outlook seems somewhat doubtful. In this case the technique described by C. H. Mayo was followed in detail. The only particular in which a departure was made was in bringing the left ureter through a perforation in the mesentery of the sigmoid flexure, which permitted of implanting it into the latter more easily without kink or twist.

The recording of a single case such as this is perhaps of doubtful value and requires some justification. My justification is the rarity of exstrophy of the bladder in our community. At the Massachusetts General Hospital, in the last fifteen years, this is only the third case of exstrophy which has been subjected to operation. The condition itself is quite rare, occurring once in from 30,000 to 50,000 births. Furthermore it is often associated with other anomalies or complications which may make surgical intervention out of the question. It is a serious condition in itself, resulting in death in about one half the cases, by the tenth year, according to Charles Mayo. The usual cause of death being pyelo-nephritis.

Exstrophy of the bladder has excited the interest of surgeons from the earliest times. Many ingenious devices and operations for its alleviation have been proposed. The literature

of the subject is voluminous and intensely interesting. All the early plastic operations performed for closing the defect had the vital fault of not relieving urinary incontinence.

The advantages of making use of the sphincter ani for the control of micturition, by diverting the urinary stream into the lower bowel, were recognized at an early date and many ingenious methods were devised. There is hardly a more interesting and illuminating chapter in the history of surgery than the records of the persistent attempts, during the last half century, of various investigators and surgeons in various countries, to overcome the difficulties of this problem. Many names deserve mention in the evolution of a successful technique, which was finally worked out, a technique which we surgeons of today have freely inherited from the travail of our predecessors.

In this brief article only the salient points and a few of the names can be mentioned.

Peterson<sup>1</sup> made a most comprehensive review of the early literature on this subject in 1901.

Simon<sup>2</sup>, in 1851, was probably the first to attempt a direct union between the ureters and the bowel for the purpose of diverting the stream of urine into the rectum in a case of exstrophy of the bladder. He did not perform a true transplantation but made a uretero-rectal fistula. The result was not a success.

Lloyd<sup>3</sup> attempted the same thing by means of a seton at about the same time, without success.

Thomas Smith<sup>4</sup> was perhaps the first to perform a true ureteral transplantation into the bowel. He operated on a case of exstrophy of the bladder in 1878, performing bilateral implantation of the ureters into the colon in the lumbar region, in two stages; there was a fatal result immediately after the second stage, with evidence of total kidney destruction on the side first operated upon.

That the urinary stream could be completely diverted into the rectum with adequate sphincteric control by the sphincter ani, and without ascending infection of the kidneys, was demonstrated by W. W. Keen<sup>5</sup>, who reported, in 1877, the case of a woman with extensive post-typhoidal vesico-vaginal and recto-vaginal fistulae, in which he completely closed the vaginal outlet. She had remained well for fifteen months at the time the case was first reported. The case was subsequently reported in 1919. She lived in good health for thirty-five years after the operation, urinating entirely per rectum.

Maissoneuve performed this same operation for the first time in 1851, but it was not reported until 1889. It became apparent from such cases as these and from animal experiments that preservation of the valve-like ureteric orifices was a factor in preventing ascending infection of the kidney.

Recognition of this fact led Maydl<sup>6</sup> to de-

vise the operation which bears his name and whose principles hold good to this day for the condition of exstrophy of the bladder. In 1892 Maydl successfully operated on two cases of exstrophy of the bladder by intraperitoneal transplantation of the trigone with the ureteric orifices into the sigmoid flexure. These cases were reported in 1894, and were the first entirely successful ones ever reported, in which urinary control was maintained, and useful life ensued without infection of the kidneys.

The original Maydl operation has since received many modifications. Bergenhem<sup>7</sup> of Sweden, in 1894, performed the first extra-peritoneal implantation of the intact ureters with a rosette of bladder attached to each including the ureteral orifices, by separate openings into the rectum. The patient was reported well one and one quarter years later.

Peters<sup>8</sup>, working independently, devised a similar operation which was reported in 1901.

Moynihan<sup>9</sup> modified the Maydl operation by performing it entirely extra-peritoneally. He reported one successful case in 1906.

Many others modified the Maydl technique in various ways and reported successes, but without essentially altering the basic principle of the operation. The Maydl or Bergenhem-Peters type of operation was generally accepted for the condition of exstrophy of the bladder, but was not applicable for the transplantation of the ureters for carcinoma of the bladder, where the entire organ required extirpation. The implantation of the severed ureter into the bowel continued to be followed by infection of the kidney in a very large proportion of cases.

This problem continued to vex the surgical mind, and much endeavor was spent upon it.

Fowler<sup>10</sup>, Stiles<sup>11</sup>, Franklin Martin<sup>12</sup>, and others made progress in this direction, but it remained for Coffey<sup>13</sup> to perfect a technique which the test of time seems to have made secure. In 1911 he reported his method, the essential feature of which is the implantation of the severed ureter intraperitoneally into the colon after carrying it for the distance of an inch or so just under the mucosa of the bowel.

This simple procedure seemingly prevents the reflux of gases and liquids from the bowel into the ureter and avoids infection. He applied the method with success to cases of exstrophy of the bladder as well as in carcinoma.

C. H. Mayo<sup>14</sup> modified and clinicalized Coffey's method and has described it in detail. In the Mayo clinic, some thirty cases of exstrophy of the bladder have been operated upon by this technique with an immediate mortality of about 15%. In twenty-three cases results have been traced for a year or more and have been found to be excellent. Three patients are living and well over ten years after operation.

Lower<sup>15</sup> has adopted the same method also with excellent results.

The Maydl and Bergenhem-Peters methods have continued to attract adherents.

Buchanan<sup>16</sup>, in 1909, in a very complete review of the literature of the subject, collected eighty cases of the Maydl operation with a mortality of 28%, and twenty-six cases of the Bergenhem type of operation with a mortality of 11%.

Stevens<sup>17</sup>, and later Hutchins and Hutchins<sup>18</sup>, have added to the lists of operated cases,



FIG. 1. Before operation.

contributing successful personal cases as well as collecting from the literature. The mortality of the Maydl operation remains at about 28% and of the Bergenhem operation at 15%—the latter being approximately the same as for the Coffey-Mayo operation. The figures for ultimate survival do not materially differ in the three methods.

Recent modifications of the original Maydl and Bergenhem operations have brought them very close together. If the Maydl operation is done extra-peritoneally it differs from the Bergenhem-Peters operation only in the fact that the intact ureters are implanted into the rectum with a surrounding perimeter of bladder wall in one piece instead of two pieces.

In making a choice between the method of implantation of the intact ureters with their orifices into the bowel by the Maydl or Bergenhem-Peters technique, or of the severed ureters by the Coffey-Mayo technique, each surgeon must be guided by his own inclination. Both methods have succeeded in relieving a desperate class of unfortunates from intolerable suffering and social ostracism. Only the test of further time and experience will give the ultimate decision.



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FIG. 2. After operation.

DR. CHARLES G. MIXTER, Boston: The deformity of exstrophy of the bladder is a terrible one. The incidence is very rare—one in 40,000. However, in a surgical hospital dealing with children we see a considerable number. In the last eleven years we have had 20 cases admitted to the wards and in the Out-Patient Department a number more. The time of election for operation I should say would be between the age at which the control of the rectum is established and the school age. If one

waits beyond the school age, the child is so offensive to its schoolmates that admission to school is refused. The indications for early operation are the protruding painful bladder wall, offensive character of the discharge and the possible saving of the kidney from destruction. The mortality of untreated cases at ten years is 50%; at twenty years it is nearly 70%. The plastic operations all have the fundamental defect that they have no sphincteric control. The Sonnenberg operation in which the ureters are freed and brought down into the urethra has advantages over plastics on the bladder. This deformity is always accompanied by epispadias and in this position of the ureters a urinal can be worn, whereas no urinal can be worn in the bladder area.

Our experience has been with the Stiles, Maydl and Coffey-Mayo operations. In my experience the first two types of operation have been followed by infection and death which might ensue in weeks or in several years. In one case I had a male child live in comfort for two years and a half and then die of kidney infection. The Coffey-Mayo type of operation may offer definitely more. There is one child in whom I transplanted the right ureter four years ago but a second operation has been refused. The exposed bladder wall is causing no discomfort. Another case was apparently alive and well when last heard from several years after transplantation.

There are a certain few points which have impressed me particularly in my experience with several of these cases. The first is the transplantation of one ureter at a time. I think that is of definite importance because, as Dr. Davis says, there may be temporary ureteral obstruction. Second, the right ureter should be transplanted first as it is easier technically. Care should be taken to avoid kinking of the ureter where it comes through the posterior peritoneal wall. However, one should not strip the ureter back unnecessarily as it may have some effect on the subsequent peristaltic action of the ureter wall. The ureter should be transplanted without tension and it should run under the mucosa and not in the muscularis. If it is under tension the value of the valve action of the submucous transplantation is lost and the opening is converted into a funnel. At the second stage it is better not to remove the extruding bladder, but to wait for a third stage to do this as it can be operated upon with far less risk at a later stage. And finally it is well to put in an in-dwelling rectal tube for several days as that relieves the tension and the temporary irritability of the rectum to the retained urine.

DR. ARTHUR H. CROSBIE, Boston: I think there is no doubt but that the Coffey-Mayo method of transplantation of the ureter offers today the greatest amount of relief for these deplorable cases, but even that method is far from per-

fect on account of the frequency of pyelonephritis; and I have a feeling that some day we will devise a more successful method for handling these cases.

Last spring Dr. Burns of Kansas City described an operation which he had devised which possibly in time may be perfected so that it may be used. He did a double operation, a combined suprapubic and perineal operation, freeing the wall of the bladder and trigone in front and then going in through the perineum and freeing it up and drawing the bladder down into the pelvis and anchoring it there. His idea later on was to do some sort of an operation to form a new urethra. Of course, that is where the great difficulty will be in an operation of that sort. But I feel that he has accomplished a great deal as far as he has gone. He has the bladder held firmly in the pelvis and closed suprapubically so that there is a sinus, and he is now able to keep an in-dwelling catheter which successfully drains out the urine. That accomplishes a great deal. The patient is no longer wet with the urine, and it drains into a bottle. The danger of pyelonephritis in an operation of that sort is less than in an operation where the ureters are connected directly with the bowel, and I feel that possibly in time somebody will be able to improve upon that and get a urethra with sphincteric control. At any rate the child has been very much improved and able to live longer than if he had his ureters transplanted into the bowel.

DR. JOHN H. CUNNINGHAM, Boston: I have listened to Dr. Davis' report with much interest, as I have had the opportunity to operate upon several patients with this distressing condition.

I would like to speak about certain practical points in connection with the treatment, which I believe important. It is generally agreed that the bugbear of any operative procedure which transplants the ureters into the intestinal canal is renal infection, and from this most of the patients ultimately die.

A measure which Dr. Davis did not mention, and which I believe is of importance in avoiding this, is the use of urinary antiseptics over a considerable period of time prior to undertaking the operation. Another point in this connection is that if transplantation is to be made into the rectum, which my experience has led me to believe is the location of choice, the rectum should be prepared by lavage of the lower bowel with a mild antiseptic solution twice daily, for at least two weeks prior to the operation.

I am convinced that transplantation of the ureters into the intestinal canal is preferable to attempting plastic operations upon the defective bladder, because of the necessity of repeated operations to repair the defect and, even when the anterior portion of the bladder is closed, incontinence of urine continues.

What Dr. Crosbie has said about the procedure which Dr. Burns has employed, in one case, is illustrative of this. I have seen this patient, and while he has a closed bladder, incontinence remains, and it seems to me that the overcoming of incontinence is the primary object of any operative procedure, and that the only way that this can be accomplished is to divert the urinary stream into some point in the bowel.

For my own part I believe the rectum to be preferable for several reasons. In six patients with exstrophy in which we have carried out a procedure of rectal implantation, we have obtained most satisfactory results. All of our patients have been over six years of age, and I think it unwise to operate before the patient can give some co-operation in the after-care.

The operative technique is simple, and is briefly as follows: The pre-operative preparation of the kidneys and rectum by urinary antiseptics and lavage I consider important. At the time of operation the first step consists in passing ureter catheters into each ureter, and catching them at the ureteral orifice by a catgut suture. The bladder is then freed from the skin margin, and thoroughly mobilized. The ureters are freed for about an inch. The peritoneal cavity, if opened, is closed by suture. The assistant places a finger into the rectum, pressing it forward into the field of operation. The rectum is opened, and an anastomosis of the whole bladder, if small, is made to the incision in the rectum. If the bladder is too bulky for a good anastomosis it is trimmed down to a convenient size.

Before carrying out the suture, the ureteral catheters are passed into the rectal opening and brought out through the anus. The edges of the bladder are then sutured to the edges of the rectal incision, in such a way as to produce no torsion of the ureters. The anterior defect of the soft parts and the herniae, which are usually present, may be repaired. A drain should be left in the pre-vesical space. The ureteral catheters still remaining in the ureters and protruding through the anus are left for about ten days, and a rectal tube is placed in the rectum as the final step of the operation, for the purpose of rectal drainage and lavage. This tube we have usually left for about a week.

The features which recommend this procedure to me, in preference to any others, are that the operation can be completed at one sitting; the ureteral orifices are preserved; and there is little shock to the operation.

Ascending renal infection has not been common, and the functional results have been excellent.

From my way of thinking the results, both immediate and ultimate, are more satisfactory than in the Coffey operation.

DR. LINCOLN DAVIS, Boston (closing): I have

little to add. With the experience of one case I do not feel able to say much as to the choice of operative procedures. I should think Dr. Cunningham's procedure was a modification of the original Maydl operation, and, of course, that has a great many adherents today.

The fact that Dr. Charles Mayo has reported

three cases that have gone ten years without ascending infection shows that the other method has stood the test of time. Of course, if you are dealing with a case of extirpation of the bladder for malignancy, you must employ some method like the Coffey-Mayo method, as you cannot retain any of the bladder wall.

## ORIGINAL ARTICLES

### STUDY OF 100 CASES OF EMPHYEMA TREATED BY A CLOSED METHOD\*

BY HORACE BINNEY, M. D., F. A. C. S., BOSTON, MASS.

ONE of the important lessons learned by many surgeons during the great war was the choice of the proper time at which to operate for emphyema of the pleural cavity. The large number of cases of emphyema which developed in the various influenza and pneumonia epidemics in Army camps in 1917 and 1918 gave an unprecedented experience, as a result of which the danger of too early operation became more generally understood than before.

Another fact which stands out clearly in the more recent literature is that under a certain method of treatment which had been followed before the war, the operative mortality in various epidemics was very high; whereas in the cases handled according to more modern methods a much lower average mortality was obtained. The older method consisted in thoracotomy with or without rib resection, the introduction of a drainage tube left open and draining into the dressings, with disregard of the entrance of air into the chest cavity. The operation was often performed as early as the second week of the pleuritis, when an infected fluid was found on aspiration, and a true emphyema, while undoubtedly in the making, had not yet developed. The mortality in such cases was high. According to Rodman<sup>1</sup>, in the first 50 cases seen during the measles epidemic at Camp Bowee, Fort Worth, Texas, in 1917 and 1918, the mortality was 45%. As a result of the more conservative procedure of repeated aspirations, until the toxemia had diminished, and operation at a later stage, the mortality in the second 50 cases fell to 28%. Further modification by the use of Dakin's fluid irrigation, after the first week, lowered the mortality to 10% in 133 cases. Thus it was clearly shown that a very important factor in successful treatment was the avoidance of too early operation.

The other important factor, which at least in the hands of a considerable number of surgeons has contributed to a relatively low mortality, is the use of closed drainage. While admit-

ting that a series of cases, operated by the open method with a relatively low mortality, is occasionally reported, the writer has failed to find any large number of cases so operated with as low an average mortality rate as in the rather large number of reports of cases operated by the closed method.

The purpose of this article is to place on record a series of 100 cases operated upon consistently by a closed method.

Before proceeding to the discussion of the cases and their treatment, it may be of interest to compare the more important recent reports with reference to the employment of the open or of the closed method.

#### OPEN METHOD

Hollenbach<sup>2</sup> uses a gauze tampon instead of a tube, which may be regarded as a modified open drainage, and has a 25% mortality. Moscheowitz<sup>3</sup> states that in 1914 the mortality among 299 cases at Mt. Sinai Hospital was 28%; while the method employed is not stated, few surgeons at that time were using a closed drainage method, and it seems probably correct to assume that the majority of these cases were treated by the open method. Peek and Cave<sup>4</sup> reviewed the cases at the Roosevelt Hospital during the period from 1915 to 1920. There were 15 cases operated on by an open intercostal drainage without rib resection with 5 deaths, a mortality of 33.3%. Doubtless these were the more serious cases or rib resection would have been performed. The general mortality in cases operated by all methods was much lower.

#### CLOSED METHOD

The mortality rate is the most important criterion in determining the possible advantage of the closed method. No statistics embracing any considerable number of cases seem to have been published before the war; but there are numerous authors in the literature since 1917 who publish strikingly low mortality rates following operations by the closed method. The

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most important examples of these are as follows:

The Report of the Empyema Commission<sup>8</sup>, based on cases at Camp Lee, gave a mortality rate of 4.3% in a series of 23 cases treated by repeated aspirations, thoracotomy, and drainage (usually with a closed tube).

Bunts<sup>9</sup> reports a mortality of 13% in a series of army cases. Harloe<sup>7</sup> in a series of 44 adults and 27 children reports a mortality of 8.4%; these were drained by trocar and catheter.

Manson<sup>1</sup>, who treated his 43 cases by trocar and catheter followed by Dakin's irrigation, had no deaths, no secondary operations, and no chronic cases—a truly remarkable record. An almost equally brilliant series is that of Mozingo<sup>6</sup>, who in 1921 reported his army cases, 69 in number, with one death, and civil cases, 45 in number, with 2 deaths; a mortality of 2.6%.

Stone<sup>10</sup> reports a series of army cases seen at Fort Riley, Kansas. Ninety-four cases treated by aspirations repeated about every third day, for 10 to 16 days, followed by rib resection and closed drainage, showed a mortality of 9.5%. Whittemore's<sup>11</sup> lowest mortality was in 66 cases treated by the closed catheter method and Dakin's irrigation, the mortality rate being 6.6%.

The series of 100 cases herein reported were all operated upon at the Boston City Hospital, between January 1, 1920, and January 10, 1924. A great majority of these cases were on a special pneumonia service, which was organized in 1918 and continued until given up during the summer of 1922. As a result, about 90% of the cases were operated upon previous to January 1, 1923, and sufficient time has therefore elapsed to form a judgment as to the after-results in all but a few cases. Letters have been sent to all but four of the discharged cases, and there have been replies by letter or in person in 49. It is probable that of those cases which have not been followed up a great majority remained well. Excepting two, these were cases in which the wound had entirely healed at the time of discharge.

#### IMMEDIATE RESULTS

In the series of 100 cases there were 13 deaths following operation for acute empyema. Of those which recovered, 68 cases were discharged healed; 19 cases were discharged with a discharging sinus or a small granulating wound. In three of these cases the failure to heal was due to a bronchial fistula.

#### LATE RESULTS

Of the 68 cases which were discharged healed, there have been, so far as it was possible to ascertain, only two in which further trouble developed. In one, Case 59, there had been a large empyema complicated by pericarditis and bronchial fistula. The convalescence was 124 days, but at discharge the wound was healed, the patient in good condition, and x-ray showed

pleural thickening only. The patient returned to work as a baker three months after leaving the hospital. A month later he was readmitted on account of pain in the region of the old wound, of one week duration. He had a temperature of 100, physical signs pointed to fluid, and pus was obtained by aspiration. Further rib resection and drainage, followed by irrigation with Dakin's fluid, was effective in closing the cavity and a small sinus was later injected with bismuth paste. The patient was discharged at the end of five weeks, wound practically healed. The patient was seen and examined one and one half years after the last operation, and found well; he has worked steadily for a year. There is equal expansion of both sides of the chest; evidence of slight pleural thickening, and a very slight degree of lateral curvature, due apparently to the rib resection.

The other case was a child of 6 years, whose wound broke down 6 months after leaving the hospital, and she was readmitted with a small suppurating sinus which was found to be due to necrosis of a rib. Removal of a sequestrum was followed by prompt healing.

Of this group, 35 have reported as "well" after periods varying from three to thirty-six months after discharge from the hospital. As stated above, the great majority of the cases were discharged early in 1922 so that ample time has elapsed to judge of the results in the cases traced.

*Cases discharged with sinus or granulating wound.* There were 19 cases discharged from the hospital which still required dressings for a small suppurating sinus or granulating wound. Two cases have not been traced; of the remaining 17, 9 reported by letter or showed upon examination that healing occurred in from a few days to three weeks.

- 1 case healed at the end of 2 months;
- 2 cases healed at the end of 4 months;
- 1 case healed at the end of 6 months;
- 1 case healed at the end of 10 months;
- 2 cases became chronic: No. 74 and No. 33;
- 1 case, No. 100, died about six months after discharge from the hospital, apparently from miliary tuberculosis and myocarditis.

#### CHRONIC EMPYEMA

Besides the immediate mortality, the percentage of cases becoming chronic is important in estimating the value of any operative method in empyema.

Definition of the term chronic empyema is rather difficult. While the average case heals in six to seven weeks, there are cases in which, because of the large size of the empyema cavity, or because of complications such as bronchial fistula, intercurrent contagious diseases, or other factors, the convalescence extends into months. In such cases if the cavity is observed to be steadily decreasing in size and the patient's general condition improving, it seems proper to use

the term sub-acute; and in this class may be placed the cases which had healed at the end of six months. The cases requiring a longer period have been considered as chronic. On this somewhat arbitrary basis, four cases have been put in this class, No. 33, No. 60, No. 74, and No. 100.

The subsequent history of these cases was as follows:

CASE No. 33. This was a girl of 14 years, whose convalescence from the acute empyema was complicated by pericarditis and bronchial fistula. In the second month, diagnosis of probable endocarditis was also made. After a slow convalescence of 128 days she was discharged to the Convalescent Home, but three weeks later was readmitted on account of return of fever. The sinus was still discharging and there was a fair-sized cavity still present. On improving the drainage the temperature became normal; the bronchial fistula had closed, but as the cavity showed no signs of closing it was decided to operate. One month after admission, under gas and ether, rib resection and exploration of the cavity were performed. The cavity was found to extend for three inches backward over the diaphragm, and another branch of it upward for four inches. Considerable thickened pleura was excised and gridiron incisions were made in the visceral pleura, which allowed good expansion when positive pressure was applied through the cone by the anaesthetist (Ransohoff's Operation).

There was considerable shock following the operation, but the patient rallied and was doing well until the sixth day, when symptoms of meningitis developed. In spite of vigorous intraspinal treatment the patient succumbed on the fourteenth day. Autopsy was not permitted.

CASE No. 60. A boy of 3 was admitted December 22, 1921, with signs of pneumonia of the left upper lobe, with a history of having been sick for one week. Two days after admission the left lower lobe became involved; on the eighth day (15 days from the onset of illness) he was tapped and 30 c.c. of thick, greenish pus withdrawn. (The culture proved later to be pneumococcus, Type 1.) On the same day, under gas-oxygen, intercostal trocar puncture was performed in the ninth space, posterior axillary line, and a catheter drain introduced. His temperature fell from 102 to 100 and his condition improved. He had routine treatment for nine days; then, as he had pulled out the drain, a short tube was inserted, draining into the dressing. On the same day he developed a rash, typical of scarlet fever, and he was transferred to the contagious department. He was kept there for four months and then discharged to his home, with a discharging sinus. He was not brought back for further treatment; but in spite of this the wound finally closed one year after leaving the hospital. A letter three months later reported "Had mumps and whooping cough since discharge"; otherwise well.

The accidental occurrence of pneumothorax, followed by scarlet fever and impossibility of applying measures to expand the lung and disinfect the cavity were responsible for the case becoming chronic. It demonstrates, however, the tendency in infants for the lung to expand and close the cavity without the aid of suction or even air-tight drainage.

CASE No. 74. In Case No. 74 healing was prevented by necrosis of the rib. The patient was admitted (March 4, 1922) with signs of a large effusion in the left pleural cavity, with a history of a chill, followed

by pain in the left chest, two days before entrance. The presence of rales suggested an underlying pneumonia and he was therefore not tapped early. A week after entrance he coughed up two ounces of purulent sputum, suggested the rupture of a lung abscess, or of an empyema into a bronchus. Four days later aspiration in the left back drew 20 c.c. of thick pus; culture later proved to be *staphylococcus aureus*. The following day (the 16th day of the disease) rib resection was done under novocain and air-tight drainage established. As might have been expected, irrigation of the cavity with Dakin's fluid caused the patient to cough up some of the fluid. Syphon drainage was therefore continued. The drainage, abundant at first, soon diminished, and on the tenth day, as the tube caused pain, it was removed and a rubber dam cigarette drain employed. A month after operation the bronchial fistula was still present, but temperature was normal and condition improving steadily. At the end of another month the fistula was apparently closed. Bismuth paste injection and x-ray showed an irregular cavity of a few drams capacity along the eighth rib. As the patient's condition was excellent he was discharged to the country on June 30 (104th day after empyema) at his own request. The sinus intermittently healed and broke open during the next seven months. On February 13, 1923, he was readmitted. A probe passed into the sinus detected bare bone. The sinus was dissected out down to the rib and a mass of newly formed bone removed. No cavity was found; after a short interval bismuth paste was injected into the resulting sinus, which was of only one dram capacity. X-ray showed a narrow sinus between the ribs only. The patient was discharged in April, 1923. Two months later, the wound still discharging, investigation showed a small sequestrum, which was removed under novocain. The wound then healed promptly. In February, 1924, the patient reported in good health, chest normal on examination. No scoliosis.

CASE No. 100. It is a question whether this case should be excluded as being one of tuberculosis. The patient's mother and one sister died of tuberculosis. He was a spare man 40 years old, with a history of good health except for typhoid at 25. On December 22, 1922, he was admitted to the Fordham, N. Y., Hospital, for acute pleurisy. Five weeks after admission he developed consolidation of the left lower lobe, according to his story. He was tapped twice while in the hospital, but no fluid was obtained. His temperature meanwhile varied from normal to 102.5. At the end of seven weeks he left the hospital and came to his home in Boston, where he was cared for by his physician, Dr. M. J. English. Owing to his weak condition and occasional fever he was confined to bed. On March 9 he was tapped by Dr. English in the left lower back and pus was obtained. On admission to the City Hospital, March 11, 1923, he appeared somewhat emaciated, his temperature was 99, his pulse 110. The left chest showed flattening and diminished mobility. The signs were of consolidation in the left axilla below the third interspace, and in the left axilla below the third interspace. On March 12, under novocain, the abscess was opened by an incision over the ninth rib in the post-axillary line. Aspiration of the pleural cavity between the eighth and the ninth ribs drew more pus. Owing to the local infection, rib resection was not done, but trocar puncture was performed, and a catheter drain inserted. A few drams of very foul smelling pus were withdrawn with a syringe. Culture proved to be of *bacillus coli communis*. From the fifth day after operation he ran a practically normal temperature, the amount of drainage being always slight. His condition, however, remained poor; and as the drainage increased, on April 20 a portion of the ninth rib was resected by Dr. A. R. Kimpton and a larger drain inserted.

During May, skin sepsis and cellulitis developed, which was incised and treated with Dakin's fluid. X-rays repeatedly showed density in the lower half of the left chest. Cultures at this time showed staphylococcus aureus and streptococcus haemolyticus. The patient had a period of melancholia, but improved sufficiently in June to be up and about. He went home on June 14, the sinuses of the empyema and abscesses still discharging. The patient went to the country on June 8, remaining until September 1. During this time his condition was improved; he had gained ten pounds, and was less nervous, but there was a profuse discharge from the sinus containing many staphylo- and strepto-cocci. No tubercle bacilli were ever found. In October he became more nervous and soon hysterical convulsions ensued; these became steadily worse during November, and, although local signs in the chest improved and his temperature remained normal, his heart action became weaker, and on December 1 his heart action was very rapid and irregular, and he died the following day. Myocarditis was apparently the chief cause of death.

Owing to the atypical course and the lack of definite empyema cavity in the case, plus the tubercular family history, it is doubtful whether this case should be included in the ordinary empyema class; and even in the chronic empyema group. It is mentioned here, however, for the sake of completeness.

#### BRONCHIAL FISTULA

While a number of cases, under routine irrigation with Dakin's fluid, at one time or another showed slight evidence of communication between the pleural cavity and bronchi, either having a sudden fit of coughing or complaining of tasting the fluid upon injection, only five showed definite signs of bronchial fistula.

The first of these cases, No. 46, showed a foul pus when aspirated and at operation. The fistula remained during his convalescence, 67 days, but in spite of this his cavity was well closed at discharge. There being only a small sinus, he was treated in the Out-Patient for a short time, and the late results are not known. In all probability there had been rupture of a superficial lung abscess into the pleural cavity in this case.

The second case, No. 22, had a very similar course, but healed completely six months after discharge from the hospital, and was in excellent health one year later.

The third case, No. 26, was a man of 46, admitted in the fifth day of an influenzal bronchopneumonia, with signs of fluid already present. He was very toxic and dyspnoeic, the sputum was foul smelling. Aspiration on the third day drew off 20 ounces of sero-pus which showed streptococcus viridans. As the temperature had fallen to normal but the patient's condition remained serious, it was felt that drainage of the empyema was indicated. A small piece of rib was resected under local anaesthesia and a catheter introduced. The pus obtained was very foul. Two or three days after operation air was found to be escaping from the wound and to have produced extensive emphysema of the back.

The tube was kept open and when the patient coughed, air escaped freely into the drainage bottle. A cellulitis of the back developed; the patient's condition became steadily worse and he died on the sixth day. Autopsy showed a small gangrenous abscess cavity in the right upper lobe, 2 centimeters in diameter, connecting with an empyema cavity in the right base, which was empty of fluid. It was a mistake in this case to have closed off the catheter immediately after operation, and during the after care. As soon as the emphysema was discovered, the tube was kept constantly open, but the cellulitis had already developed, and undoubtedly contributed to the patient's death.

The following tables cover the more important details:

#### AGE OF PATIENTS

Years	Cases	Deaths
1-10	35	5
11-20	19	1
21-30	8	1
31-40	23	3
41-50	7	1
Over 50	7	2

#### ETIOLOGY

The number of cases in which the empyema followed lobar pneumonia was 66; of these, 65 were post-pneumonic, and one meta-pneumonic.

Bronchopneumonia preceded in 3 cases; acute pleurisy preceded in 3 cases; postoperative bronchopneumonia preceded in 1 case.

The time of the operation, reckoned from the onset of the illness, is given in the following table:

Week	Recovered	Died
1st 1 case	0	1
2nd 11 cases	9	2
3rd 35 cases	31	4
4th 28 cases	23	5
5th 11 cases	11	0
6th or over 10 cases	10	0
Unknown 4	3	1

This decreasing mortality with the length of the pneumonic process, or of the period after recovery from pneumonia, is in agreement with the experience of surgeons in the war, and with the statements of recent writers.

#### BACTERIOLOGY

The following are the organisms found by culture made from the pleural fluid at or about the time of operation:

	Cases
Pneumococcus in 73 cases:	
Type 1	52
Type 2	6
Type 3	0
Type 4	15
Streptococcus haemolyticus	6
Streptococcus viridans	2
Staphylococcus aureus with pneumococcus	3
Staphylococcus albus with pneumococcus	1
Streptococcus haemolyticus with pneumococcus	4

In the 13 fatal cases the bacteriology was as follows:

	Cases
Pneumococcus: Type 1	6
Type 2	2
Type 4	1
Streptococcus haemolyticus	2
Streptococcus viridans	1
Staphylococcus	1

**Blood Cultures:** Cases in which blood cultures were positive:

Pneumococcus, 15 cases, the type being the same as that found in sputum or pleural fluid.  
Streptococcus haemolyticus, 1 case.

#### STAY IN HOSPITAL

The average stay in the hospital after the operation was 55 days. In 63 cases without serious complications it was 49.7 days. As stated above, 78.1% of the cases which recovered were kept in the hospital until the wound had healed.

**Return of temperature to normal.** The chief criticism of the employment of closed drainage with a comparatively small tube is that it is inadequate for the removal of fibrin clots, and therefore unsurgical. While the presence of fibrin and the difficulty in its removal in some cases constitute a disadvantage, the following figures show that the difficulty does not often apply, judging by the time required for the temperature to reach and maintain a normal level.

The temperature became normal

in the 1st week in 42 cases	
in the 2nd week in 15 cases	
in the 3rd week in 12 cases	
in the 4th week in 18 cases	
Total	87 cases

In the 57 cases with temperature becoming normal in the first and second week, there were no complications, and with the help of Dakin's irrigation, the fibrin was removed without any difficulty except in one case. On the other hand, in the cases with slower return of temperature to normal, of the third week group, 12 in number, in all but three there were complications as follows:

	Cases
Multiple cavities or adhesions requiring secondary operation	3
Pericarditis	2
Much resistant fibrin (considered to be a complication)	2
Scarlet fever	1
Bronchial fistula	1

In the fourth week group, 18 in number, there were only four without complications. In the latter

	Cases
Multiple cavities or adhesions prevented adequate drainage, and required a secondary operation in	4
Pericarditis occurred in	3

Otitis media occurred in	1
Diphtheria occurred in	1
Scarlet fever occurred in	1
Lung abscess occurred in	1
Necrotic rib occurred in	1
Abscess of thigh (probably pyemic in origin) in	1
Much resistant fibrin present in	1

Thus in only four out of 87 cases did the factor of fibrin appear to be important, but the prolongation of convalescence resulted as a rule from the complication. In only seven uncomplicated cases did the temperature remain elevated longer than the second week.

#### ANAESTHETIC

The anaesthesia in a great majority of cases was local, in the form of novocain. During the latter part of the series, paravertebral as well as local injection of novocain was employed in rib resection cases, thus insuring anaesthesia of the periosteum—always somewhat difficult with purely local technique. The figures as regards mortality are not instructive since local anaesthesia was necessarily used in the sickest patients, except in infants. In children between 5 and 10 years, ether was used in 10 cases with 2 deaths; gas oxygen in 7 cases with no deaths; local in 6 cases with 1 death; paravertebral and local in 1 case. In infants (under 5 years), ether was used in 5 cases with 1 death.

The following is a resume of the history in the fatal cases, and the causes of death.

**CASE No. 1.** Male, 33. Admitted Jan. 4, 1920, with temp. 104°, pulse 130, resp. 45. History of acute influenza 4 days previous. Chill 2 days ago, with increase of cough and fever. *P. E.*—Cyanotic; solid rt. lower lobe with friction rub axilla. Sputum showed streptococcus haemolyticus and pneumococcus Type 2. Blood culture positive, pneumococcus Type 2. During the first two weeks tapped 4 times; at first thin fluid, becoming thick pus. Operation on 14th day, local anaesthesia, resection of 1¼ inch 8th rib, post-axillary line. One pint thick pus drawn through air-tight catheter drain. Five days later temperature still high; X-ray showed encapsulated fluid in rt. axilla. Rib resection, second cavity drained. Died on the 22nd day. No autopsy. Cause of death: Septicaemia.

**CASE No. 2.** Male, 32. Admitted Jan. 14, 1920. Temp. 102°, pulse 140, resp. 40. Onset 1 week ago, with chill, cough, and pain in left side, sputum becoming reddish. *P. E.*—Cyanotic, consolidation in both lobes of left lung. Sputum: Type 1, pneumococcus. 18th—Tapped; 1200 c.c. thin pus. 23rd—Tapped; 1800 c.c. thin pus. Prognosis doubtful. 24th—Intercostal puncture, catheter drain. 26th—Slight improvement. 27th (13th day after entrance)—Local anaesthesia, 9th rib resection *P. A.* line, closed catheter drain. Much fibrin for first few days. Blood culture positive Type 1. Dakin's fluid irrigation every 2 hours. One week after operation tube draining well but temperature 103°. Gradually weakened, delirious, failed, and died, 23 days. No autopsy. Septicaemia.

**CASE No. 3.** Boy, 4½ years. Admitted Jan. 28, 1920. Temp. 104°, pulse 160, resp. 60. Fever 12 days, cough 6 days before entrance. *P. E.*—Lobar pneumonia (lt. upper lobe). Jan. 31—"Condition desperate." Feb. 4—Signs of fluid, rt. ant. axillary region; tapped. 10 c.c. pus. 6th (9th day after entrance)—Ether.



1½ inches 4th rib resected, ant. ax. line. Adhesions separated toward axilla and 100 c.c. turbid serum escaped. Air-tight catheter drainage. Following operation, free drainage of thin pus. Otitis media. Weakened and died the 10th day after operation. No autopsy. Probable septicaemia.

CASE No. 4. Female, 29. Admitted Nov. 12, 1920. Temp. 102°, pulse 130, resp. 40. Sudden onset 5 days ago, with cough, fever, and pain. Morphine addict for 5 mos. P. E.—Cyanosis, many "subcu" scars. Large effusion in lt. chest. Many rales in rt. lung. Heart displaced to right. 13th—Tapped, thin pus. showed strepto. haem. and strepto. viridans. Local anaesthesia, resection 1½ inches of 9th rib, P. A. line. Air-tight catheter drainage. Three pints pus withdrawn. 14th—Worse, temp. 104°, pneumonia in rt. lower lobe. Blood culture, strepto. haem. 15th—Failed and died. No autopsy. Septicaemia.

CASE No. 5. Boy, 14 years. Admitted Nov. 19, 1920. Temp. 103°R, pulse 110, resp. 35. Six days previously, blow on ribs (rt.) in football. Since then, pain, fever, malaise, no cough. Signs of fluid rt. base posteriorly. Tapped, 8th interspace in P. A. line, and "small amount of pus" obtained. Culture showed staphylococcus. 21st—X-ray report: "Apparently fluid in rt. base." Operation—Novocain, resection 1¼ inches of 9th rib in P. A. line. Trocar puncture through pleura and catheter inserted, but no pus obtained. 24th—Tapped below angle of scapula and 75 c.c. pus obtained. No growth from culture. 30th—Temp. up, no drainage from tube. Dec. 1—Ether, further rib resection through original wound and exploration with finger, but no pus obtained. 3rd—Worse; signs of peritonitis. 4th—Weakened and died. Autopsy showed a small, narrow encapsulated empyema in paravertebral groove. Diaphragm high and adherent to parietal pleura up to the 7th rib in P. A. line; lung somewhat collapsed; trocar wound of diaphragm into perit. cavity behind the liver. Peritonitis. Injury to abnormally high diaphragm.

CASE No. 6. Male, 46. Admitted Jan. 15, 1921. Temp. 100°, pulse 90, resp. 25. Five days ago sudden pain, cough, sputum brownish, becoming very foul. P. E.—Dyspnoeic, signs of fluid rt. lower back, but rales present. 18th—Tapped, 600 c.c. thin sero-pus, foul odor; streptococcus viridans. 19th—Local anaesthesia, resection 1¼ inches 9th rib P. A. line, air-tight catheter; 300 c.c. very foul pus drawn off; two days later syphon drainage established and air found to bubble out of tube when patient coughed. 26th—Has steadily failed, died. Autopsy showed an empty empyema cavity, with a small gangrenous cavity in lung 2 cm. in diameter, and an opening 5 m.m. in diameter connecting with empyema cavity. Septicaemia.

CASE No. 7. Girl, 20 months. Admitted Jan. 28, 1921. Temp. 102°, pulse 115, resp. 28. Onset, 18 days before entrance with fever, followed by cough. To day tapped by family physician and pus obtained. P. E.—Dyspnoeic, signs of effusion in axilla and back; bronchial breathing and rales in front. Tapped in 8th interspace posteriorly, and 100 c.c. thick pus obtained. On third day again tapped, and 60 c.c. withdrawn. Culture showed pneumococcus Type 1; X-ray showed fluid in rt. pleural cavity. As temperature reached normal in P. M. it was judged that the pneumonic process had subsided, and that drainage was indicated. On the following day, under ether, intercostal trocar puncture was done and catheter drain inserted. Considerable pus drained during the next few days and Dakin's injections given. A week after operation the temperature had risen to 103° and secondary operation decided on. Feb. 10—Ether, resection of 2 inches of 9th rib P. A. line. Pleura opened but no pus obtained. Adhesions between lung and parietal pleura, therefore

separated with finger but no pockets found. The temperature fell for a few days, but again rose, and condition became worse in spite of absence of signs of further cavities or pneumonia. She failed and died on the 19th day post. op. No autopsy. Septicaemia.

CASE No. 8. Man, 70. Admitted Feb. 22, 1921. Temp. 101°, pulse 120, resp. 40. Ailing for 2 weeks, onset 2 days ago with pain in right chest. P. E.—Dyspnoeic, signs of lobar pneumonia, friction rub in axilla. Four days after entrance, signs the same, but no rales, pain less. On 10th day, tapped, 150 c.c. thick pus aspirated. Culture, pneumococcus Type 1. On account of the patient's age and improvement in his condition after the first tapping it was judged best to treat by repeated aspirations before operating. Two further attempts being unsuccessful, he was operated upon under novocain on the 21st day after entrance. Rib resection, 10th rib mid-scapular line, and catheter drain inserted. During the first and second weeks after operation patient did well. Out of bed on the 9th day. On the 17th day after operation he had a chill and some infection was found in the wound, which was opened and drained. As cavity was practically closed, tube was removed. On the 21st day he was taken out of bed to be X-rayed, became rapidly exhausted, then comatose, with paralysis of the left chest, tongue drawn to the right. He died that evening. No autopsy. Cerebral hemorrhage.

CASE No. 9. Man, 31. Admitted March 26, 1921. Temp. 104°, pulse 110, resp. 30. Onset 24 days before, with cough and pain. Diagnosis by family physician, "Double pneumonia"; crisis on 10th day. For week previous to entrance, increasing dyspnoea and pain in right back. Septic temperature. P. E.—Moderate dyspnoea and cyanosis. Signs of fluid in right axilla, and lower three-quarters of back. 28th—Tapped, 200 c.c. of pus. Culture pneumococcus Type 1. (28th day of disease.) 30th—Under novocain, trocar puncture in 9th interspace, mid-scapular line, No. 25 French catheter drain; 300 c.c. pus drawn. Temperature in P. M. 104°. Blood culture pneumococcus Type 1. His condition did not improve although drainage was free. Anti-pneumococcus serum was given, but the temperature was lowered only temporarily. On the 6th day, systolic murmur was noted. He died on the 11th day after operation. Autopsy showed right pleural cavity closed by adhesions except for lower posterior position where there was a "little organizing pus" (i. e., fibrin). Left cavity obliterated. Vegetative endocarditis. Septic infarcts of liver and kidneys.

CASE No. 10. Girl, 6 years. Admitted Jan. 2, 1922. Temp. 100°, pulse 90, resp. 45. Onset 9 days ago, pain, cough, blood-tinged sputum. P. E.—Slight dyspnoea, signs of fluid in the left chest. Heart displaced to the right. Jan. 3—Succussion, pyo-pneumo-thorax. Tapped 200 c.c. pus. Culture pneumococcus Type 1. Three days later, local anaesthesia, trocar puncture in 9th space and catheter inserted. 200 c.c. pus and some fibrin drawn off. Although drainage was fairly free, leakage around the catheter, probably due to plugging by fibrin, resulting in infection about puncture wound. On the 7th day this was enlarged under gas oxygen, rib resection done, and tube replaced. The temperature was lowered somewhat and drainage was free, but on the 11th day vomiting and abdominal distention set in, she failed rapidly, and died on the 14th day. No autopsy. Peritonitis?

CASE No. 11. Boy, 8 months. Admitted Feb. 7, 1922. Temp. 100°, pulse 140, resp. 40. Onset 18 days ago with slight cough; 11 days ago, dyspnoea and fever more marked. Diagnosis by family physician: Pneumonia. Two days ago, question of meningitis. P. E.—Sick, dyspnoeic, signs of fluid in right lower back, but rales still present. Tapped, 5 c.c. thin pus



and fibrin. No signs of meningitis. Slight improvement until 9th day after entrance, when temperature was 102°. Tapped; thick pus. Operation, local anaesthesia, trocar puncture and catheter inserted. "Small amount of pus" obtained. Failed, and died 3rd day after operation. No autopsy. Septicaemia?

CASE No. 12. Man, 62. Admitted March 28, 1922. Temp. 102.8° (P.M.), pulse 140, resp. 40. Onset 2 days ago, with chill, cough and pain in chest. *P. E.*—Dyspnoea, excitation in lower back; pleuritic rub in axilla; no pleural movement. On 6th day after entrance, temperature 102°. On 10th day, temp. elevated and signs of fluid in left chest. No rales. On 14th day, tapped; 200 c.c. of thick pus. On 17th day, operation, local anaesthesia, trocar puncture in 9th interspace mid-scapular line, 240 c.c. thick pus through catheter drained. For two days improvement; then condition worsened. Tapped rapidly, and died on the 7th day after operation. Autopsy showed cavity between left side of pericardium and lung containing 150 c.c. of pus; another at root of lung, containing 100 c.c. Small pockets between lung and diaphragm. Acute peritonitis.

CASE No. 13. Girl, 3. Admitted Dec. 9, 1922. Temp. 102°, pulse 134, resp. 36. Chronic otitis media, frequent cough. Had been operated on for tonsils and adenoids at another hospital on Nov. 15. Four days later, pneumonia. Temp. became normal on 10th day, but fever returned 4 days ago. *P. E.*—Pale, left chest immobile; flat everywhere; heart displaced to right. Tapped, thick pus. On the second day after admission, local anaesthesia, trocar puncture in 9th space, mid-scapular line. Catheter inserted. Temp. fell in next few days, and with Dakin's fluid irrigation, drainage apparently good. On 16th day, temp. 103.8°. X-ray and physical signs pointed to a doubtful pocket at base. Tapped, negative. Patient improved until 28th day, when temp. was up again. On 29th day, ether, resection 3 inches of 8th rib; light adhesion toward axilla broken up with finger. Near site of drainage tube is a small cavity, apparently in the lung; opening enlarged but no pus found. Drained with tube and cigarette wick. Patient weakened and died two days later. No autopsy. Septicaemia.

#### DIAGNOSIS

While in the great majority of the series the symptoms and physical signs were characteristic of the disease, and the diagnosis therefore easy, it was found important to corroborate the conclusions in every case by X-ray pictures and exploratory tapping. This is the greatest help in determining the proper time for operation as well as the best site for the drainage operation. In cases with considerable pleural thickening, it may be quite impossible to state just where the larger bulk of fluid is situated. The exploratory needle may fail, unless the puncture is repeated many times, which is undesirable. Under the guidance of a clear X-ray plate, the puncture is made more intelligently than can be done by physical signs alone. The evidence obtained by the X-ray alone is not sufficient, as a rule, in determining the site for operation in the chest wall. The needle must enter the cavity directly and pus flow freely into the aspirating syringe in order that the operator may be sure of his grounds. It is not sufficient for the surgeon to choose the point where the physician has as-

pirated some few days before as the necessarily safe site for drainage. If a considerable amount of fluid has been removed, the lung may have expanded and become adherent at the point of puncture; or the diaphragm may have been drawn up (especially if the patient is a child) and become adherent at the needle puncture, if the point chosen was low.

At the time of operation the surgeon should repeat the exploratory puncture before making up his mind as to the site of drainage unless he was present when the first exploratory puncture was made and the case is one requiring immediate operation. The neglect of this rule in one case resulted in a fatal mistake and taught a never-to-be-forgotten lesson. (See fatal case No. 5.)

#### TECHNIQUE OF OPERATION

The abscess cavity having been located by careful study of the physical signs, X-ray plates (stereoscopic if necessary), and the exploratory needle, the choice of intercostal trocar puncture or rib resection will depend upon the severity of the case. In the ordinary case, the point of election for the insertion of the tube is the level of the ninth rib in the posterior axillary line, which, being well toward the bottom of the cavity, gives dependent drainage, places the tube in a situation where the recumbent patient is not apt to turn so as to displace or kink the tube, and is high enough above the diaphragm to prevent pressure upon or irritation of that structure. This site, unless rib resection is performed, is not so favorable for intercostal trocar puncture owing to the close approximation of the ribs as the mid-axillary line is approached. A tube or catheter of No. 26 F. size is desirable for free drainage of fibrin particles, even with the use of Dakin's fluid, and the intercostal space at the above site is too narrow to prevent pain from pressure on the intercostal nerve, actual pinching and obstruction of the tube. Therefore, for intercostal puncture the site chosen should be in the mid-scapular line, where the intercostal space is wider, and, as a rule, in adults the trocar can be inserted between the ninth and tenth ribs with safety as regards the diaphragm; in young children, the eighth interspace is safer. For the puncture operation, local anaesthesia is to be preferred, except in infants, and infiltration of the intercostal muscles and pleura are carried out as the exploratory needle is advanced. The pus having been located, a one-half inch incision with a scalpel is made through skin, deep fascia, and well into the intercostal muscle to facilitate the passage of the trocar, and to prevent it from plunging through the parietal pleura from too great force being used, with consequent possible injury to the lung or to a high diaphragm. The size of catheter used in adults is No. 26 F., and a trocar and canula into which it fits snugly is essential. In infants and

young children it should be about No. 22 French. The tip of the catheter is cut off and a fenestra or two made one-half inch from the end. The catheter should be marked by nicking with a scalpel or otherwise about two inches from the end. This enables one to gauge the position of the end of the catheter in the empyema cavity after the removal of the canula. On introducing the catheter it is at once clamped off to prevent air entrance if the patient coughs and inspires vigorously. This rarely happens at once but may develop if pus is allowed to flow rapidly. After the canula has been removed, the catheter is drawn out until the two-inch mark appears just at the skin level. In case of intercostal puncture, a silk worm gut stitch taken deep into the fascia on either side of the tube tied loosely over the skin with a square knot close to the tube so as not to cut into the skin, and the ends then tied round the tube, will hold the tube in place during the first week as a rule. After that, adhesive straps and a stitch round the tube suffice. If rib resection is done, tight closure of the muscle layers with catgut sutures prevents leakage and in most cases seals off the rib ends enough to prevent osteomyelitis. In the last half dozen cases sterile bone wax was rubbed into the ends of the ribs. To avoid the discomfort caused by coughing or actual shock in weakened patients, the cavity is emptied slowly, the quantity removed at operation depending on the tension of the fluid in the cavity. The aim should be to remove enough to lower the tension to the normal level or slightly below atmospheric pressure in inspiration. In small empyemata this may be done after the removal of a few ounces with a piston syringe and opening the catheter for an instant to see if the flow ceases during inspiration. In large empyemata with displacement of the heart and tension upon the mediastinum, the emptying of pus cannot be carried as far without provocation of a severe cough or shock and it suffices to remove a few hundred c.c., enough to reduce the great tension and thus avoid leakage around the catheter into the deeper parts of the wound. As no leakage should take place if the wound remains clean, only a small gauze pad, split to surround the tube and covering the incision, fastened tightly by adhesive plaster to the chest wall and protected by a swathe, is necessary for a dressing.

#### AFTER CARE

For the next 24 to 48 hours the tube is kept clamped off, the pus being drawn off at intervals by a piston syringe. When the cavity has become emptied or fibrin masses have begun to separate from the pleural surfaces, obstructing drainage, the catheter is connected by a long tube with a half-filled bottle of corrosive or other antiseptic solution and the end of the tube kept well submerged. To assist in disinfecting the cavity and in loosening up fibrin and rendering

it soft enough to pass through the tube, Dakin's fluid is injected through the catheter, which is then clamped off for half an hour and the injection repeated in two hours. Where fibrin interferes with the drainage, the piston syringe or "milking" the catheter suffice in the great majority of cases. Rarely is it necessary to remove the tube. (This was done not more than two or three times in the series.) The injection of Dakin's fluid is begun cautiously owing to the frequent possibility of a bronchial fistula. As a rule it was found that over two ounces was irritating, provoking a severe cough; and that quantity was the pretty constant maximum. The attempt was made to keep the drainage free by softening up fibrin in the region of the catheter, rather than to disinfect the whole cavity, as is the aim in the radical operation for the Carrel-Dakin treatment of empyema.

As soon as the patient's condition warrants, he is instructed to blow "Wolff Bottles" with increasing frequency in order to assist in lung expansion. This procedure, as well as irrigation, is contra-indicated in cases of bronchial or pulmonary fistula. In some cases, however, it can be cautiously begun after the fistula has closed, and continued if no further air leakage takes place. The patient is set up in bed as early as possible. In the average case he is gotten out of bed by the end of the second week. Drainage with the original catheter or a slightly smaller one is, as a rule, kept up until the temperature stays normal, the drainage almost ceases—a few c.c. or less in 24 hours—and the cavity has practically closed. In exceptional cases the tube has seemed to cause irritation of the granulations and consequently a slight temperature, and has been replaced by rubber dam. Where the infection hangs on, the tube is sometimes replaced by a small Carrel tube and drainage allowed to take place around it, and Dakin's fluid used until the temperature is normal and a smear shows ten or less bacteria to a field. Then all drainage is omitted and an alcohol dressing applied over the wound. In streptococcus cases, however, cultures are advisable, and drainage should be kept up until both smear and culture are negative for streptococci. The closure of the cavity is checked by the X-ray as well as by measuring the fluid injected with a syringe. In this series the technique of cavity measurement was (1) Emptying the cavity by aspiration with a syringe and having the patient cough vigorously; (2) laying the patient on the well side so as to bring the opening of the sinus uppermost; and (3) injecting Dakin's fluid through a catheter which fits loosely in the sinus, until air bubbles cease and fluid appears. With the cavity obliterated, the fluid leaks out at once around the catheter. Owing to pleural thickening, the physical signs of percussion and auscultation are practically valueless in judging as to the closure of the cavity, but tactile fremitus is usually a valuable sign.

It will be present in spite of pleural thickening, when other signs fail, provided the cavity has become obliterated.

#### HYGIENIC TREATMENT

Especial attention was paid in most cases to diet, encouraging the patient to take an abundance of fat and carbohydrates. As soon as the patient was up and about, or where possible while still in bed, he was given as much fresh air and sunlight as possible. Where slow healing for any reason was present with poor chest expansion, or scoliosis threatened, exercises were encouraged. As a result no scoliosis resulted except in one case where a moderate degree of curvature persisted after the sinus had closed. The patient had neglected "Wolff Bottle" blowing, and had refused to cooperate in many ways. His sinus remains closed a month after discharge, but the case is too recent to know the final result as to chest expansion and scoliosis.

#### SECONDARY OPERATION

This was performed in 21 cases for the following reasons:

*Rib-resection*—For the purpose of inserting a larger tube, or effecting drainage at a lower point, following trocar puncture, 9 cases.

On account of pinching of the tube between the ribs, causing pain, 1 case.

On account of pinching of the tube between the ribs, obstructing drainage, 1 case.

For unexplained, persistent temperature or unsatisfactory drainage (adhesions being freed and a larger tube inserted), 6 cases.

For accessory or secondary pockets, 3 cases.

Operation for necrosis of rib, 1 case.

Of the cases requiring secondary operation, 4 died. (See histories of fatal cases Nos. 5, 7, 10, and 13.)

Of the 21 secondary operations, 11 were performed after previous intercostal trocar puncture, and 10 after previous rib resection. The proportion of secondary operations following intercostal trocar puncture to those following previous rib-resection was high: 30.6% as compared with 19%. Considering, however, that many of the cases in which intercostal trocar puncture was performed were desperate, and any more radical operation was contra-indicated, this high proportion of secondary operations is to be expected, and does not detract from the value of intercostal puncture. The value of intercostal trocar puncture, on the contrary, is clearly shown by the mortality rates of the two groups of cases:

	Recov- eries	Deaths	Mort.
Intercostal trocar puncture	36	5	12.1%
Primary rib-resection	51	8	13.5%

Thus, in a group of more serious cases, intercostal trocar puncture gave a lower mortality than primary rib-resection in a group of less serious cases. The obvious conclusion on a statistical basis is that a larger number of the cases should have had primary intercostal trocar puncture; and a lower mortality would thus have been obtained. That the surgeons performing the operations in this series were tending toward this conclusion appears from the fact that in the first 50 cases intercostal trocar puncture was performed 19 times, while in the second 50 cases it was performed 25 times. The mortality in the first cases was 18%, whereas it was 8% in the second 50. That this marked lowering of mortality was due wholly to better choice of operation is hardly a fair conclusion, for many of the fatal cases in the first 50 were in the winter of 1919-20, when the disease was of a much more virulent nature than in the subsequent years.

For valuable assistance in the after-care of many of the cases rendered by the Resident, Dr. F. Dennette Adams, and for helpful advice and cooperation given me by Dr. E. A. Locke and others of the visiting staff, house officers, and nurses, I wish to express my appreciation and gratitude.

#### SUMMARY

1. In 100 cases of acute empyema in infants, children, and adults, the mortality following drainage by a closed method was 13%.

2. The mortality in cases operated on in the first and second weeks following the development of the effusion was 25%; in those operated during the third week or later, it was 11.3%.

3. Twenty-one cases required secondary operations.

4. Sixty-eight cases were discharged healed; nineteen cases with a discharging sinus or a small granulating wound.

5. Dakin's fluid, as a disinfectant and for irrigation, was used in all cases, except when a bronchial fistula was present.

6. Four cases became chronic, including one probably tubercular.

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- 4 Peck and Cave: *Surgery, Gynecology and Obstetrics*, 1923, Vol. 36, p. 357.
- 5 Emphyema Commission Report. *Jour. Am. Med. Assn.*, 1918, Vol. 71, p. 366.
- 6 Bunts: *Transactions of American Surgical Assn.*, 1920, Vol. 38, p. 156.
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## PRESIDENT'S ADDRESS AT THE ANNUAL MEETING OF THE NEW HAMPSHIRE SURGICAL CLUB, SEPTEMBER 15, 1924

BY DAVID W. PARKER, M. D., MANCHESTER, N. H.

FIRST of all I wish to express to you my appreciation of the honor conferred upon me in making me your president for the past year.

This club, as its name implies, should and does represent the best surgical thought in New Hampshire, and its membership includes men whose judgment and skill are respected far outside the borders of our state.

The sincere desire of the surgeon of today is to be a factor in raising the standards of surgery in his community, city or state. That the surgeons of New Hampshire are working to this end is shown by the increasing number of hospitals that are meeting the standards of efficiency as laid down by the American College of Surgeons.

A hospital, however, can never reach the highest degree of efficiency without a complete unity of the staff of that hospital. Neither can we as surgeons reach our highest efficiency without a close fellowship and cooperation with each other. And any agency, like this surgical club, which will foster this fellowship and cooperation will be a power for good in our relations to each other and to the public.

In New Hampshire, are we, as a class, realizing the full possibilities of our education and professional experience?

Do we command the professional respect and confidence of the people of the state to the extent to which we have a right to expect? And are we relying for this confidence and respect on the brilliancy of a few men rather than on team work and cooperation of the profession as a whole? I believe it is a reasonable hypothesis that nothing is so detrimental to the best interests of our profession as this lack of team work and cooperation.

The most potent obstacles to cooperation are:  
1st—Misunderstandings, usually senseless and with a foundation as light as air, and easily adjusted with a little frankness and friendly spirit.

2nd—Lack of personal contact.

Cooperation is something that is difficult to achieve with strangers. How often have we formed a false impression of a man's ability and later, after association with him, have come to respect his attainments. These meetings can accomplish this object by bringing us together socially and professionally and affording us the opportunity of seeing each other's work and having the benefit of friendly criticism.

Ex-President Meiklejohn, in an article in Harper's Magazine of November, 1923, states that "There is no greater sin than that of holding an opinion as true without proper evidence, when proper evidence is available." He further says, "We understand by studying properly,

and if we have not ourselves studied properly then we must defer to the judgment of those who, having done so, are, at the point in question, our superiors." I believe that nowhere does this statement apply more truly than to our profession. All of us know how hazardous it is to form a surgical judgment on assumption, and without complete routine investigation. And some of us can recall with considerable chagrin and regret the results on cases that have been approached in this way. Surgery is not an exact science and is therefore not uniformly successful, but we must at least guard against the mistakes of carelessness, as these mistakes reflect not only on us personally but discredit surgery in general before the public. Is it not wise also on cases that present problems along special lines to cooperate with men who have made special studies along those lines, and will not this procedure increase our esteem in the eyes of the patient rather than be taken as a sign of weakness? We are all working for the same goal, and many of us, either through force of circumstances or choice, have attained more knowledge and experience in certain lines than we have in others. By recognizing these facts and helping each other can we not get results that would otherwise be very difficult? Scientific knowledge is simply an accumulation of classified, carefully recorded personal experiences of many men. It is therefore obvious that our own experience carefully recorded and classified cannot help but add materially to the available fund of information possessed by each one of us. I appreciate fully the drudgery of careful record taking, but the satisfaction derived from having the information contained therein complete and covering all points of the case accurately, whenever desired for reference, more than compensates for the labor involved. A good record requires an infinite attention to detail and must be complete, including laboratory and pathological findings.

It is not safe to slight the examination in regions outside of the obvious pathology, as not infrequently things may be found unexpectedly that may have an important bearing on the prognosis and treatment. Furthermore, an examination record with "negative" written all through it falls far short of its possible value when desired for future reference. Classification of records by disease and operation serves the same purpose as an index in a library and makes a mass of information easily available which would otherwise be very hard to gather.

Mature, conservative surgical judgment, to be at its best, must, regardless of preliminary education, have as a background this classified knowledge based on personal experience. It is obvious that the teacher in our medical schools



is in a position to constantly check up his knowledge, but there is no greater stimulus to us for careful record taking and mental classification of our experience than the preparation of scientific papers. Unfortunately, however, very few of us take the time to report carefully the results of our work. There are, scattered throughout our state, many surgeons who are doing careful, conscientious work and are getting results of which they have reason to be proud. These men do not get the recognition they deserve as we seldom see their work and more seldom do they report it. Many of the very valuable suggestions, both as to surgical appliances and treatment, have come from men isolated from surgical centers and thrown on their own resources. I can recall instances where original contributions have been made by men of our own state of New Hampshire, which have later been incorporated in the standard text books—too often, however, without proper recognition being given. Is it not possible that we have been a little too passive in our own recognition of these men?

The preparation of papers would not only be a mental stimulus to us personally, but also the more universal publication of these papers would be a means of bringing before the profession of our own and neighboring states the character of work that is being done by New Hampshire surgeons. A paper that is worthy of presentation before this or any other body in the state is worthy of publication. I feel strongly that the transactions of this club should be perpetuated in some form. I believe that this club is of sufficient size and importance to publish yearly its own record of its transactions. If this does not seem feasible, however, there are high-grade journals which would gladly become the official organ of this society. I would sug-

gest that this matter receive your serious consideration.

My object in presenting this paper before you today is to make a plea for unity and coöperation, in the belief that here lies the remedy for many of the obvious ills from which our profession is suffering, and to urge an added interest in and a larger attendance at the meetings of this club, which would consequently afford a wider opportunity for personal contact, both socially and professionally.

I have also endeavored to emphasize the importance of good records and their subsequent utilization as a basis for the more universal preparation and publication of scientific papers, as I am firmly convinced that there is no better medium, not only for increasing our own proficiency, but also for obtaining a recognition of that proficiency by the profession as a whole. I also urge that this club take some action on the provision of a suitable medium for the publication of its transactions—at least I would invite some discussion of this matter.

#### In conclusion:

I know that it is the earnest desire of each one of us to do careful, honest and conscientious surgery and wherever possible to raise our level of efficiency. If we can subjugate our personal egos, forget our jealousies and stand together shoulder to shoulder for everything that will raise our standards of efficiency, and will increase the confidence of the public in us and their respect for us, I believe that we can make this New Hampshire Surgical Club a power in our state of which we may all be proud. An organization which will pay large dividends in an increased loyalty, unity and efficiency among its members and a new respect and confidence of the people of our state.

## THE TOAD IN THE HOLE CIRCUMCISION—A SURGICAL BUGBEAR

BY DOUGLAS H. STEWART, M. D., F. A. C. S.

The term "Toad in the Hole" is derived from the Hebrew kitchens and cook-books; and it is here used because the writer never has heard any other name for the condition about to be described. The clearest mention of the matter is the following paragraph from the pen of Dr. Thomas H. Lanman of Boston\*: "There is one type of case that should be especially mentioned because it is the sort for which circumcision is inadvisable. It is that in which the boy has a very small penis and a large pad of supra-pubic fat, and post-operative care and cleanliness are made very difficult. Extreme cases present the appearance of an umbilical

polyp, and this is very alarming to the parents. Certainly, in this type, operation should be postponed until there is a further growth of the penis itself, and a receding in amount of the supra-pubic fat."

The present writer admits at once that he has never produced a toad in the hole, therefore there is no case here of a burnt child dreading fire. It is somewhat like the child who fears and shuns fire because he has seen a friend and companion burnt. While it is true that the writer has had no troublesome case of his own, it is equally true that he has had troubles sufficient in explaining away the results obtained by others. As Dr. Lanman states, those "re-

\*Boston Med. and Surg. Jour., p. 628, April 10, 1924.



sults" are "alarming," and this is so whether the operation has been performed by surgeon or by a mohel.

As to the religious rite when performed by a mohel, the parents are much overwrought by a toad in the hole result; because they hold tenaciously to the opinion that if a surgeon had done the work, then the accident would not have occurred. Instances, facts of a sort, gossip, and so-called evidence furnish a perfect deluge of words by way of proof of this contention. On the contrary, when the operator was a surgeon, orthodox relatives, perhaps not unstimulated by mohel and rabbi, make it their duty to impress upon the parents that the calamity (so called) is a direct visitation of a just God in his wrath for a sinful violation of the plain written law. To add to the hurly-burly, the wretched parents believe, assert and are assured that their child is forever impotent and will have no children. Surely under all the circumstances one may easily understand that some unenlightened people are brewing a very pretty kettle of obstinately maintained misapprehensions which soon are to be masqueraded as facts.

Why the matter has not been brought into the courts is incomprehensible; because the people interested have a way of talking things over and stirring each other up, until their outlook becomes vicious and their hatred for the operator grows boundless. What decision a judge and jury would come to is unfathomable. Particularly so in view of the fact that physicians themselves, who are not familiar with the condition under discussion, appear to maintain a condemnatory silence when brought into its presence. There are now two patients under observation (aged 4 years and 63 years) who present or have presented about all the angles of the toad in the hole result. The operations were performed by two different and competent surgeons. For the purpose of this paper the writer has exhibited those cases to several physicians and has then taken them aside in private and has asked this hypothetical question: "If placed under oath, would you feel bound to say that the operator was at fault?" Thus far the answers have been affirmative. At the same time it should be clearly stated that explanation and demonstration always caused a reversal of opinion. The writer's opinion is that, if an exhibition of a toad in the hole patient to a jury could be managed, the verdict would coincide with the amount demanded; and the defendant in a malpractice suit would pass many unhappy hours, no matter how innocent he might be. And he would have the greatest trouble to escape punitive damages, if he did finally escape. Yet the whole thing is but a bugbear, and, like most bugbears, no matter how slight itself, it makes for a very real alarm. All one has to do is to show that the alarm is unwarranted and unjustified by any fact of the

case. Yet this is not a simple matter, since it includes the explaining away of a parent's insistence on believing what he sees with his own eyes; untaught and untrained as they are. "He saw with his own eyes that the child had a penis before operation; and he now sees that the child has no penis, or has only a damaged one."

The way some of the mothers howl and cry over the toad in the hole condition is most startling. One woman made such a terrific noise that all the ambulant patients rushed out of the building and into the street in a panic. The psychology of the unreasoning expression of terror that can be evidenced by a Russ-pol Jewess is most interesting, but would carry us too far afield; therefore this sketchy portrait will furnish example enough.

In managing toad in the hole patients it is well for the physician to be forearmed with some sort of formula that will carry hope, comfort and peace to the nervous, frightened parents—something that the wayfaring man, though a fool, cannot mistake. Here is one: "Stop fussing. We will get the boy a good wife yet." The language may not be polished; but the people understand it, and its effect as a wiper away of tears is prompt and satisfactory; whereas gentleness and kindness would be misunderstood, unappreciated and might add fuel to the fire.

Photographs of the toad in the hole condition have not been satisfactory, because the picture shows the penis plainly and not at all as it is seen by the untrained or careless eye. In reality the parts all fit together with a marvelous adjustment. So perfect is it at times that two ellipses, one within the other, drawn upon the back of the clenched fist will make a good illustration. Let the inner ellipse represent glans and penis. Let the outer ellipse represent the rim of the socket or curb of the well, as it were. Then with a cotton swab and some tinct. iodine or other color let this be drawn (as stated, upon the dorsum of the first).

In some instances with a flaccid penis at rest in the hole there is little or no protrusion or protuberance. The penis can be lifted or drawn out of its socket, or the pad of fat can be pushed back; but when erect the penis climbs out, as it were. In the child patient at present under observation the non-protrusion and smoothness would have to be seen to be appreciated.

The treatment of this child is planned according to a routine that was formulated many years ago and it has served its purpose well. It is merely the diet for and the treatment for obesity. The child is supposed to be weighed weekly and its diet is so regulated that the weight is kept down to standard for age. As has already been pointed out, the condition is brought about by a more or less localized obesity, together with a small-sized penis. After severance of the foreskin, which in this instance

may be compared to a sort of suspensory ligament, the penis sinks into a sort of well in the excessive supra-pubic pad. The curb of the well is formed by a fold of the skin. For cleansing purposes, filling the hole and applying freely in its neighborhood, one heaping teaspoonful of Sod. Bicarb. plus one level teaspoonful of Sod. Perborate dissolved in a tumblerful of warm water acts like an alkaline non-irritant  $H_2O_2$  and thus lessens the usual difficulty of maintaining post-operative cleanliness.

apart sidewise and the penis projects quite as it should. Manifestly this patient neither requires nor desires treatment. He came for a herniotomy which was successfully performed.

A colleague suggests by way of conclusion that about the most valuable thing in treatment is a suggestion, that comes from the writer's advice to the mothers: "Bring your child to me on the fourth Thursday of each month and I will watch over his development." This it appears works out pretty well in keeping the mother from wandering about with her child and

**1.**  
**Inner ellipse**



**2.**  
**Inner ellipse, penis and glans**



**3.**  
**No. 2 surrounded by an outer ellipse**



The adult (aged 63) under observation states that he always needed circumcision and was so advised by various physicians. However, the matter was put off until he was 40 years of age, when he wished to marry and therefore had a circumcision performed; after which the penis promptly fell down the hole. He found no trouble at all with a sexual intercourse that was satisfactory to both parties. His wife has three healthy children. He can have intercourse when he wishes but is rationally abstemious. In this patient when the penis is flaccid all is so smooth that a cursory glance from the side (lateral), when the man is lying down on his back, might mistake pad, penis and socket for a vulva. However, at the least erection the lips of the socket are shoved

thus obtaining all sorts of misunderstood and disquieting opinions. The patients are usually brought for two or three months and by that time the parents have seen the child with an erect penis; or they have become accustomed to the appearance of things so that they are persuaded that the child has a penis, or they have become convinced by some weird and unknown reason that all their worry was but a false alarm in every way. After such conviction they come occasionally, perhaps once in five years. At least they come if they are at all uneasy in mind, or they come to show the doctor how well the child did get along. In one instance they came to talk about the child's fruitful marriage and to make arrangements for his wife's approaching confinement.

## BOOK REVIEWS

*Operative Surgery.* Volume 5—Covering the operative technic involved in the operations of general and special surgery. By WARREN STONE BICKHAM, M.D., F.A.C.S.; Former Surgeon in Charge of General Surgery, Manhattan State Hospital, New York; Former Visiting Surgeon to Charity and to Touro Hospitals, New Orleans. In six octavo volumes, totalling approximately 5400 pages, with 6378 illustrations, mostly original, and separate Desk Index Volume. Volume 5 contains 880 pages, with 1118 illustrations. Philadelphia and London: W. B. Saunders Company. 1924. Cloth, \$10.00 per volume. Sold by subscription only. Index Volume free.

Volume 5 is no exception to the high standard set in preceding volumes of this most valuable surgical work. Here again the drawings are most original

and instructive, they alone making the volume distinctive and unique. They not only depict with extreme accuracy the technic the author wishes to describe but they are in themselves unusually fine illustrations, clean cut and leaving nothing to the imagination.

This volume contains chapters on operations on the Colo-Recto-Anal Tract, upon the Kidneys and Suprarenal Bodies, upon the Ureters, Bladder, Male Urethra, Penis, Scrotum, Testicles, and upon the structures of the Spermatie Cords, Epididymes, Vasa Deferentia and Vessels.

The author is brief in his descriptions but never sacrifices clearness to brevity. He is concise, and the important points of most every operation are further emphasized by Farnsworth's excellent drawings. This work should be of value both to the busy general surgeon who wishes to quickly refresh his mind on the important points of some operative procedure, and also to the student who wishes to ground himself in the essentials of good surgical technic.

**Principles of Biochemistry for Students of Medicine, Agriculture and Related Sciences.** By T. BRAHLFORD ROBERTSON, Ph.D., D.Sc., Professor of Physiology and Biochemistry in the University of Adelaide, South Australia. Second edition. Cloth, pp. 796, with 57 engravings. Philadelphia: Lea & Febiger. 1924. Price, \$5.50.

The second edition of this work follows closely the plan of the first edition, published in 1920, but about 160 pages of new matter have been added; this includes much new material on metabolism in diabetes and on growth and a new chapter on the relationship of growth to diet.

The author states in the preface that his object in writing this book is "to present the subject of Biochemistry in close relationship to Physiology, so that the student may perceive the intimate dependence of these two sciences upon one another and come to regard physiological chemistry in its true light, as the foundation upon which we must ultimately build our interpretations of the functions of living matter." This conception of the scope of biochemistry leads the author to discuss many subjects not ordinarily treated in works on this subject, such, for example, as memory, sleep, old age, etc. While this plan makes the work unusually stimulating and interesting, it is very ambitious and it is probably beyond the ability of any person to cover such a vast field with accuracy, and it would be better for no statement at all to be made than to incorporate statements which the student will later find to be incorrect or supported by very little evidence, as is sometimes the case in this book. However, the author covers most of the field of conventional biochemistry in a satisfactory manner.

The author's confidence in the possibilities of biochemical research is illustrated by the statements concerning senescence in the concluding chapter on "The Outlook": "Senescence alone remains untouched, the final triumph of Nature over the human desire to live; but if we can once rid ourselves of the suggestive influence of age-long experience and view the phenomenon impersonally, as the culmination of a definite, understandable and therefore controllable process, we will perceive that this, too, must ultimately fail under the sway of human intellect. The indefinite prolongation of his own life is the manifest destiny of man."

## OPERATIVE SURGERY

(VOLUME 4)

**Operative Surgery. Covering The Operative Technique involved in the operations of general and special surgery.** By WARREN STONE BICKHAM, M.D., F.A.C.S. Former Surgeon in Charge of General Surgery, Manhattan State Hospital, New York. Former Visiting Surgeon to Charity and to Touro Hospitals, New Orleans. In six octavo volumes totaling approximately 5400 pages, with 6378 illustrations, mostly original, and separate Desk Index Volume. Volume 4 containing 842 pages, with 772 illustrations. Philadelphia and London: W. B. Saunders Company. 1924. Cloth, \$10.00 per volume. Sold by subscription only. Index Volume Free.

The present volume follows out the general line of excellence displayed in former volumes, with especial reference to concise description of operative technique and excellence and originality of drawings. These volumes would almost alone be worth their price from the fact of the many original and descriptive drawings included. This volume contains Chapters LIII-LXXXIII, which take up operations upon the pericardium, heart, great intra-thoracic vessels, thoracic portion of the oesophagus, intra-thoracic structures, transthoracic operations upon the diaphragm and contiguous structures, on the abdominal pelvic walls for herniae of the intestinal tract, peritoneum, omentum, mesentery, stomach, pancreas,

spleen, liver, gall-bladder and biliary ducts, general operations upon the intestines apart from special operations upon the appendix and colo-recto-anal regions and special operations upon the appendicocolic tract.

The man who studies an operation by reference to this book will have, after reading a few pages, an adequate history of practically all operative procedures for any special given region and an excellent picture in his mind of the details of the operative surgery, and also a very good idea of which is the best operation to apply for certain regions.

**Infantile Paralysis in Vermont—1894-1922.** A Memorial to Charles S. Caverly, M.D. Burlington, Vt.: State Department of Public Health. 1924.

This memorial volume published by the Vermont State Department of Public Health is a record of high endeavor on the part of a State to discover the cause and ameliorate the effects of a mysterious disease which was crippling many of its inhabitants. The inspiration of this searching investigation was Dr. Charles S. Caverly, the president of the State Board of Health. He made a "Preliminary Report of an Epidemic of Paralytic Disease Occurring in Vermont in the Summer of 1894," and until his death in 1918 never lost his acute interest in the scourge. He was responsible for obtaining the funds which made possible both the investigation under Flexner, Amoss, Aycock and Taylor, and the organization of treatment clinics under the late Dr. Robert W. Lovett and his associates. The volume contains Dr. Caverly's valuable studies of the different epidemics which have occurred in Vermont from 1897 to 1917, the contributions of Dr. Lovett and his associates in relation to the after care, and the report of the Research Department by Aycock, Amoss and Taylor. There is much of value in this book of 375 pages, and while the method of transmission and the specific causative agent have not been discovered, at least these studies have yielded important information, and the wide territory covered by them has been so carefully scanned that this ground perhaps need not be searched again.

**Aids to Psychiatry.** By W. S. DAWSON. New York: William Wood & Co. 1924.

This little manual, by one of the medical officers at the Maudsley Hospital, London, is one of the best concise descriptions of the different forms of mental disorder that the reviewer knows. It is thoroughly up to date and should be put in the hands of every student or medical practitioner. Certainly there are very few books of 300 pages, selling for \$1.50, where so much accurate information can be obtained on a special branch of medicine. The book can be strongly recommended.

**Modern Urology.** By HUGH CABOT, M.D. Published by Lea & Febiger, Philadelphia and New York. Two volumes, 1572 pages, 686 engravings, 19 plates. Price, \$18.00.

This has been thoroughly brought up to date and is marked by the great detail into which the contributors go in treating the various subjects presented. The value of mercurochrome, Gentian violet and acriflavin as germicides, the advances made in the X-ray and radium therapy of malignant disease, the merits of blood chemistry as a necessary adjunct to urology, all are thoroughly taken up. There are also many excellent plates and X-ray pictures illustrative of typical conditions discussed. Some articles have an entirely new set of illustrations.

It is regrettable that the author felt it necessary to omit the very interesting "Historical Sketch" by F. S. Watson.

The volumes can readily be recommended to physicians and students for reference. The cost, however, makes them prohibitive to the majority of students.

**Case Records**  
of the  
**Massachusetts General Hospital**

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN  
WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY

RICHARD C. CABOT, M.D., AND HUGH CABOT, M.D.  
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 10521

MEDICAL DEPARTMENT

*First entry.* A German housewife of twenty-nine entered July 20.

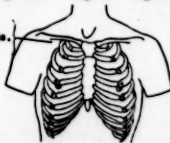
F. H. Good.

P. H. She had measles at six, and an occasional mild headache. For five years she had had slight edema of the ankles after walking, and some leucorrhea. She had three children, two born without the use of instruments. She had one stitch following her third delivery. She was seven months pregnant. For seven weeks she had urinated once at night. Eight months ago she weighed 110 pounds, her best weight.

P. I. May 22 she was suddenly seized with cramps in the lower abdomen and had one very loose movement followed by frequent burning micturition. She improved in bed, but began to have chills and fever every day, after a week every other day. A physician made a diagnosis of malaria. Medicine gave no relief. Very marked dyspnea developed. After four weeks in bed the fever subsided. During and since her illness her diet was largely milk. For four weeks she had had severe pain in the epigastrium radiating to the costovertebral angles and down the sides of the abdomen, especially acute on inspiration, not related to eating or urination.

P. E. A poorly developed, fairly emaciated, tuberculous looking woman weighing 93½ pounds, dyspneic and exhausted. Skin yellowish brown. Mucous membranes slightly pale. Nasal septum deviated. Lips dry. Sordes. Right tonsil enlarged, left small. Veins over breasts prominent. Left breast tender, slightly enlarged. *Lung* signs as shown in the diagram. Apex impulse

Increased voice  
and breath sounds.  
No rales.



of the heart felt in the seventh space 15 cm. to the left, 6 cm. outside the nipple line. Right border of dullness 6½ cm. Supracardiac dullness 6 cm. Sounds of fair quality. P<sub>2</sub> slightly

accentuated. Action rapid. A systolic murmur at the base and the apex, the latter transmitted to the axilla. Systolic thrill at the apex. Pulses small. Artery walls slightly palpable. B. P. 90/50. *Abdomen.* Uterus two finger breadths above the umbilicus. Tender along the left flank. *Extremities and rectal examination* negative. *Pelvic examination.* Nothing remarkable. Head low in pelvis for seven months. *Pupils* irregular. Left larger than right. Reactions to light and distance. *Reflexes* normal.

T. 97°-103.7°. P. 71-130. R. 27-68. *Urine.* 13-72, sp. gr. 1.010-1.012, a trace to the slightest possible trace of albumin at all of nine examinations. Two catheter specimens showed many pus cells. *Renal function* 10-15% at three tests. *Blood.* Hgb. 70%, leucocytes 7,000-17,000, polynuclears 86%, reds 2,528,000, slight achromia with stippling, without blasts. *Wassermann* negative. Three *urine cultures* showed a moderate growth of colon-like bacilli. *Widal* negative. *X-ray* showed a sharp angle at about the middle of the transverse colon. This part of the colon lay higher than any other part of the bowel. There was also a slight irregularity in outline in this region. The cecum filled and was apparently normal. No barium passed the ileocecal valve. Spine not abnormal. *Surgical consultant.* "I do not think there is perirenal abscess."

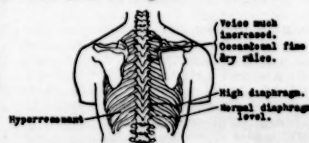
The patient's bowels were difficult to move. She had slight aching non-radiating pain in the epigastrium on admission but not later. After the forcing of fluids and urotropin therapy her temperature fell and she had less pain and costovertebral tenderness. By August 11 there was no fever. The jaundice was less pronounced.

August 12 premature labor began. She was taken to the Lying-in Hospital, where she had a forceps delivery, following which she was in excellent condition.

*Second entry.* November 26, three months later.

*History of interval.* Following the birth of her child she had flowing for four weeks, with one remission of two days, and after this had flowing every two weeks. Between periods she had leucorrhea. She had pains in the right upper quadrant and back, headache, and urination once at night.

Veins much  
increased.  
Occasional fine  
dry rales.



She came to the Out-Patient Department November 21, three months after her discharge, feeling weak and tired. Temperature 100.2° Weight 95 pounds.



P. E. Apex impulse of the heart in the fifth space  $7\frac{1}{2}$  cm. to the left. Left border of dullness 8 cm., coinciding with the midclavicular line; in the left lateral position  $11\frac{1}{2}$  cm. Right border  $2\frac{1}{2}$  cm. Supracardiac dullness 5 cm. Action slow. Sounds of good quality.  $P_2$  greater than  $A_2$ . No murmurs or thrills. Pulses normal, good volume and tension. Artery walls just palpable. B. P. 110/80. Lungs clear. Abdomen slightly tender in the right upper quadrant. Extremities, pupils and reflexes not remarkable.

Chart not remarkable. Urine.  $\bar{3}$  100-35, sp. gr. 1.002-1.008, cloudy at five of six examinations, no albumin; two catheter specimens showed much pus. Renal function 30%. Blood. Hgb. 80%, leucocytes 9,000-12,200, polynuclears 67%. Wassermann negative. Two urine cultures; profuse growth of colon-like bacilli. Genito-Urinary consultation. "Lacerations and subinvolution will account for the irregular catamenia and leucorrhea. The fundus is large and boggy and the cervix large, eroded and soft. Recommend ergot and hot douches. Later dilatation and curettage may be indicated, not at present." X-ray. Barium enema showed the position of the colon entirely changed. No evidence of obstruction or irregularity of outline. Cecum large, low, and freely movable. Ileocecal valve apparently relaxed; a considerable portion of the barium enema passed through it.

The patient remained free from symptoms. December 6 she was discharged relieved.

History of interval. During the next six years she felt in general very well, though very marked constipation persisted. After a delivery with breech presentation five and a half years after discharge she was much exhausted. The following year she began to have throbbing pulsating headache, not definitely localized, which persisted day and night fairly constantly for a year, often preventing sleep. She had moderate dizziness. She had precordial pain, dull, not radiating, present both at rest and with exercise. She was often conscious of a pounding heart beat. Dyspnea was not prominent except when climbing a hill. Her nycturia had increased to four or five on occasions, once or twice usually. She rarely had swelling of the feet or hands. Catamenia had continued as before except that for the last two months it had been irregular. Four days before admission she felt very weak and had to go to bed with severe headache and nausea. The day of admission to the hospital she began vomiting, even water being provocative.

Third entry. October 15, seven years after the last discharge.

P. E. A very poorly developed and nourished woman with evidence of recent loss of weight. Breath foul. Teeth very carious. Pyorrhea.

Tongue dry. Heart. Apex impulse felt in the sixth space 11 cm. to the left. Percussion measurements as shown in the diagram. A systolic and a midsystolic murmur at the apex and the left sternal border.  $A_2$  increased. Second sound sharp throughout. First sound sharp at apex. Rhythm regular. B. P. 230/140. Abdomen. Recent weight loss. Skin in folds, inelastic. Striae. Pelvic examination not done.

T. normal until July 22, then  $101^\circ$ - $98^\circ$ . P. 69-112. R. 16-50. Urine. Normal amount, sp. gr. 1.010-1.032, red at one of three examinations, a large trace of albumin at two. Renal function. A trace at one test, none or the slightest possible trace at another. Non-protein nitrogen October 15 83 mgm., October 19 136, October 22 186, October 26 252. Blood. Hgb. 70%, leucocytes 13,000-11,800, polynuclears 93%, reds normal. Wassermann negative.

Orders. October 15. Force fluids. Low protein, low salt diet. Magnesium sulphate  $\bar{3}$  i in the morning. Keep warm. Veronal gr. x p.r.n. Pyramidon gr. x every four hours p.r.n. October 16. Codeia sulphate gr.  $\frac{1}{2}$  by mouth. October 19. Fluid diet. No free salt.  $\bar{3}$  36 of fluid tonight by mouth if possible, otherwise by rectal taps of 5% glucose. October 20. Compound licorice powder  $\bar{3}$  ii once. October 21. Morphia gr. 1/6 by mouth at 10:40 p. m., gr. 1/6 s.c. at 10:50 p. m. October 22. Carlsbad salts  $\bar{3}$  ii in the morning. Paraldehyde  $\bar{3}$  iv by rectum. Scopolamin gr. 1/150 s.c. October 23. Scopolamin gr. 1/150 s.c. October 24. Scopolamin gr. 1/150 s.c. at 8:10 and 9:10. Morphia sulphate gr. 1/6 s.c. October 25. Morphia gr. 1/6 s.c. every three hours p.r.n. October 26 and 27. Morphia gr. 1/6 s.c.

By October 17 the patient could retain fluids. She failed, however, very rapidly. October 27 she died.

# DISCUSSION

BY DR. RICHARD C. CABOT

## NOTES ON THE HISTORY

I suppose the items that we need to keep in mind from this past history are the edema of the ankles and the recent nocturnal urination.

The diagnosis of malaria was made presumably because she had a chill every other day.

I will venture to say with some confidence that the man who wrote this history had not the slightest idea what the diagnosis was. There are two ways of writing a history. One is when we have a leading idea and proceed to follow it out, asking such questions as will bring out facts to confirm it. The other kind of history, which we are all reduced to at times, when we have not

the slightest idea what is the matter, simply records whatever the patient will vouchsafe in the way of information. Certainly this history points in no particular direction. She has had a fever; she has got over it. She has had apparently local pelvic disturbance, shown by burning micturition and possibly connected with the loose movement of the bowels. She has had very marked dyspnea, but apparently that was associated particularly with the fever and is not going on now. Then lastly we have this epigastric pain, especially on inspiration. Those things do not add up to anything, and I am entirely in the dark as we start the physical examination.

#### NOTES ON THE PHYSICAL EXAMINATION

The words "tuberculous looking" should not be used. There is no such look. I remember years ago walking through a ward of the Massachusetts General Hospital with one of those people who have the so-called "clinical eye." I was a third-year medical student at the time. He said, "You get in time so that you can tell certain things by the look. I can tell that that patient over there is tuberculous." But it turned out that the patient was not tuberculous. What do the words mean? They may mean emaciated, they may mean sallow, and that is about all they can mean. We have got over the old idea that a hectic flush is common in tuberculosis and uncommon in other diseases. So I cannot see that that phrase has any meaning.

She weighs 93½ pounds now, and that has a definite significance, because she used to weigh 110.

Almost everybody's nasal septum is deviated, so that statement does not tell us anything.

I suppose "dry râles" means squeaks. There are a great many things not told us in this lung examination. We are not told anything about percussion.

MISS PAINTER: There is no note about percussion.

DR. CABOT: There is no note about the breathing.

A PHYSICIAN: How do you recognize a high diaphragm?

DR. CABOT: We cannot without X-ray. I am glad you brought out that point. All we can say is that there is dullness at that point, and unless we have an X-ray we don't know anything more about it.

MISS PAINTER: There was a difference in the two examiners' reports. One gave dullness to flatness, with absent voice and breath sounds; the other said there were voice sounds of normal quality along the spine, suggestive not of fluid but of a displacement upward of the diaphragm.

DR. CABOT: All we can say is dullness at that point. Somebody may think as interpretation of that fact that we have a high diaphragm, and may or may not be right.

This is a very unsatisfactory examination of

the lungs, and leaves me in entire doubt about whether or not anything is going on there.

The seventh space is a very rare place to find the apex impulse of the heart. Here we are getting definite facts. This is a greatly enlarged heart, because the right border of dullness is also displaced to the right six and a half cm. from the median line, making a total width of 21.5 cm., an enormous heart if true. A systolic thrill at the apex is very important if true, and not so likely to be wrong as the observations on presystolic thrill. In the army, for instance, there was an enormous number of mistakes made in violently excited hearts. The systolic thrill is not so likely to be a mistake, and is much the most important auscultatory sign we are given in the heart. In examining the circulatory system, then, we find a very big heart with a systolic thrill and low blood pressure.

The position of the uterus is due to the pregnancy, which probably influenced the examiner to say "high diaphragm," because with a pregnant uterus the diaphragm has to be high.

There is a high irregular fever during the last two-thirds of this period. Before that it was pretty nearly normal. The respiration and pulse went up at the same time, especially the respiration, and then there was a gradual decline and a normal temperature for over a week at the end.

In nine urine examinations there was a variation of only two degrees in specific gravity. Ordinarily that is significant of advanced kidney trouble. Of course if the specimens were all taken at exactly the same time of day the urine might be the same gravity at that hour and vary a good deal at other hours. But as things go we get specimens in a hospital at all times of day, and in nine specimens we ought to get some variation in specific gravity unless there is fixation.

A renal function of ten to fifteen is on the borderline. We cannot be sure from that alone that there is any serious kidney trouble.

The hemoglobin in my opinion is wrong. I do not believe it was seventy per cent, because they say that the reds were achromic, which means that they have less hemoglobin per cell than they should have, and the count is low. Hemoglobin measurements are the commonest sources of mistake in connection with the blood.

All that I can make out from the X-ray is the stopping of the barium column apparently at the cecum. I should not be sure that that was of any special significance without more expert knowledge than I have.

Costovertebral tenderness so far as I know has not been mentioned before in this history. "Pain in the epigastrium radiating to the costovertebral angles" does not mean tenderness. There was tenderness along the left flank, so we may suppose that it is the left side and the left costovertebral angle.

MISS PAINTER: In the physical examination

they particularly say, "No costovertebral tenderness."

DR. CABOT: I suppose we must assume that there had been jaundice.

In the interval after her discharge she gained a little in weight, not much. But we are not told anything about the anemia, which I am much interested in, or about the urine.

At the second examination the heart impulse is in the fifth space. I do not know what we are to make of that. When she was pregnant the heart would be pushed up and ought to be higher, and it was then they said it was in the seventh space. One of the two examinations is clearly wrong. This one sounds as if there was no enlargement of the heart at all.

The abdominal tenderness was on the other side before.

The kidney has not shown any ability to concentrate urine, and there is still much pus.

Apparently she has made up all her anemia, for they do not even count the reds.

Apparently the genito-urinary consultant does not think it necessary to say anything about the urinary system in spite of the pus and colon bacilli. Dr. Young, you would think of a urinary infection here, wouldn't you?

DR. YOUNG: Certainly.

DR. CABOT: We rarely say "discharged cured." That word has been largely given up. So apparently she was discharged in good health.

A PHYSICIAN: Would pregnancy probably make a change in the X-ray findings?

DR. CABOT: I never heard of pregnancy's stopping the ileocecal valve.

DR. YOUNG: Of course that first result was normal and this is abnormal.

DR. CABOT: Is this an enema? It does not say anything about an enema. In the first report it says, "No barium passed the ileocecal valve."

DR. YOUNG: I assumed that it was an enema, and that the valve was competent the first time.

DR. CABOT: It is true that they say nothing about the stomach. They probably would say something if they had given the barium by mouth.

It is very interesting that a person who seemed so near death on account of so many different organs as she seemed in the first account should yet go back to normal for six years.

Before her third entry we have a history strongly suggestive of kidney trouble, with heart trouble secondary to it.

We have now had the heart's impulse in the fifth, sixth, and seventh space. Three and a half cm. outside the nipple with a total transverse measurement of twelve cm. in a small woman I should say is increased.

The blood pressure is much the most definite fact we have had yet.

The temperature chart was essentially afebrile in this entry.

We have to take back all that we said about fixation of the gravity of the urine.

This is a convincing renal function.

There is a perfectly steady climb in non-protein nitrogen, starting with about two and a half times the normal.

#### DIFFERENTIAL DIAGNOSIS

She died with chronic nephritis or with some other lesion destroying the kidney substance, perhaps a bilateral hydronephrosis. We have had suggestions of a lesion which might cause a unilateral hydronephrosis. She has had good evidence of a urinary infection such as would go along with a certain degree of hydronephrosis. But there has never been any palpable tumor, therefore probably no considerable accumulation of pus, no pyonephrosis, and no evidence of abscess outside the kidney.

The heart in the end seems to be the heart that goes with a chronic nephritis.

We have no reason to accuse the lungs or the gastro-intestinal tract or any other part of the body. So it seems to come down to chronic nephritis with hypertrophied and dilated heart and death from uremia.

DR. YOUNG, do you see anything to add?

DR. YOUNG: It is a question whether the infection may have caused any dilatation of pelvis or ureter; nothing other than that.

DR. CABOT: But as between the question of a destructive lesion other than nephritis in the kidney, and nephritis itself, is there any evidence?

DR. YOUNG: I should say the evidence is against the infection as a primary cause of damage to the kidney. It is a very common thing for an infection grafted upon a nephritis to be resistant in spite of good drainage where otherwise it would take care of itself.

DR. CABOT: Is it your guess, as it is mine, that no evidence of this urinary infection will be shown at necropsy?

DR. YOUNG: Unless there is a little dilatation and a little thickening of the mucosa, I doubt it.

DR. CABOT: It is my guess that nothing of importance will be shown other than the nephritis itself.

I am very much interested in the anemia. She had a very bad secondary anemia which apparently got well. Should you say that a colon bacillus infection going on during pregnancy, which got well when pregnancy ended, could leave such anemia?

DR. YOUNG: I do not think colon bacillus infection would ever cause this degree of anemia. It is not very virulent unless we get it secondary to some other important condition, which I should say this was not.

DR. CABOT: The question is how to account for that anemia. One has many anemias of preg-

nancy, but they do not generally blow away. They are generally severe and fatal, and if not fatal generally have some cause like a placenta previa which will cause hemorrhage. So I am rather troubled by this anemia which we have not explained.

A PHYSICIAN: Isn't the colon bacillus apt to be a secondary thing?

DR. YOUNG: If you mean secondary to another infection, I should say decidedly not. I should say it was very much more apt to be the primary organism. It is a very common organism in the urinary tract. It apparently gets into the blood stream from the intestines very readily and is excreted through the kidneys, and if the kidneys have a very low vitality they may be infected.

A PHYSICIAN: If the colon bacillus cannot find an exit what happens?

DR. YOUNG: We get a more vicious pyelitis and more prolonged trouble, but only rarely a destructive process of the kidney. Occasionally that will be from a colon bacillus alone, but as a rule not.

A PHYSICIAN: Is there a chance for it to become sterile, by being isolated and without drainage?

DR. YOUNG: No. It can stay as a low-grade infection for a long time unless it is given good drainage.

A PHYSICIAN: Braasch and Bumpus consider it almost always secondary.

DR. YOUNG: Secondary to other factors, yes; but secondary to other infections, no, is what we have found here.

A PHYSICIAN: Here is a patient with enlarged tonsils who has been sick for a long time, who has run a temperature of 103°. I did not think that looked like a colon bacillus.

DR. YOUNG: It is true we get those secondary infections from tonsils but it is there not a colon bacillus infection but a coccus infection, and the urine shows it.

A PHYSICIAN: Pyelitis with pregnancy is not an uncommon thing.

DR. YOUNG: No, it is common. But I think it is secondary to the extra work thrown on the kidney plus perhaps the obstruction of the ureter itself.

#### DIFFERENTIAL DIAGNOSIS

DR. CABOT: So far as I see this patient died of chronic nephritis and a hypertrophied and dilated heart, though seven years earlier she had been through a mysterious illness which I do not understand, which certainly was in part an infection of the pelvis, but must have been something else, and what else I do not know.

#### CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Chronic nephritis.

Uremia.

Hypertensive heart disease.

#### DR. RICHARD C. CABOT'S DIAGNOSIS

Chronic nephritis.

Hypertrophy and dilatation of the heart.

Uremia.

#### ANATOMICAL DIAGNOSIS

##### 1. Primary fatal lesions

Arteriosclerotic nephritis.

Arteriosclerosis.

##### 2. Secondary or terminal lesions

Hypertrophy and dilatation of the heart.

Chronic passive congestion.

Wet brain.

##### 3. Historical landmarks

Slight chronic pleuritis, right.

Obsolete tuberculosis of a bronchial gland.

Small fibroma of the right lung.

DR. RICHARDSON: The pia was infiltrated with thin pale fluid; similar fluid was also found at the base in considerable amount. The brain weighed 1207 grams. The tissue was a little wet but it was otherwise negative.

The skin and mucous membranes were pale. The face, forearms, hands and the backs of the hands showed what looked to me like tan. I found nothing in the body as a cause of icterus, unless that color could have been produced by a hypertrophied and dilated heart.

DR. CABOT: The patient came at a time of year when we do not expect tan.

DR. RICHARDSON: They do not tell us where she had been.

The peritoneal cavity was moist. The gastrointestinal tract showed well marked chronic passive congestion, that is, velvety red mucosa oozing thin bloody fluid. The diaphragm on the right was at the fourth rib, on the left at the fifth rib.

There were a few old pleural adhesions. The lungs showed chronic passive congestion.

The pericardium contained twenty c.c. of thin clear fluid. The heart weighed 435 grams, which for her was considerably enlarged. The myocardium was generally thick, on the left fifteen mm., on the right three mm. The cavities on the left were full sized. On the right there was some dilatation of the ventricle and marked dilatation of the auricle, and that side contained a lot of blood and post-mortem clot. The valves were negative except for a very small area of chronic endocarditis of the mitral valve, the coronaries free and negative. The ascending thoracic, the arch, and the descending thoracic portions of the aorta—that portion above the diaphragm—showed a slight to moderate amount of fibrous sclerosis. But from that point on the aorta showed marked diffuse fibrous arteriosclerosis, and there was much sclerosis of the



great branches—all told considerable sclerosis, especially for thirty-six years.

There was more or less passive congestion of the liver and spleen.

The combined weight of the kidneys was 163 grams—very small. (Normally 200-400.) They could be placed within the left ventricle of the heart. The capsules were slightly adherent, the surfaces granular, the tissue dark red, tough, with reduction of the cortex and in gross sections the cut ends of the blood vessels showing fibrosis,—a picture macroscopically of chronic nephritis apparently of the arteriosclerotic type. The pelves were negative, the ureters and bladder negative. The microscopical picture confirmed the diagnosis of arteriosclerotic nephritis.

The uterus contained a small amount of blood clot. There was a corpus hemorrhagica in the left ovary.

Culture from the heart blood gave no growth.

flanks. Peristalsis heard throughout the abdomen. *Rectal examination, genitals, extremities, pupils and reflexes negative.*

Preoperative chart as given above. *Urine and blood not recorded before operation.*

Operation was begun at 6.08. The patient made a poor ether recovery. Both lungs filled with râles next day. The temperature was 102.2° and the pulse 127 and of poorer quality. The abdomen was soft, but on the 29th was slightly distended. The patient had marked dyspnea and cyanosis, and was in very poor condition. The temperature fell to normal, the pulse to 100. Both lungs were congested. On the 30th they were worse. There was gradual cardiac decompensation. The temperature rose to 101.7°, the pulse to 150, the respirations to 52. July 31 he died.

#### DISCUSSION

BY DR. HUGH CABOT

The evidence in this case is short and does not seem to warrant extended discussion. The whole question turns upon the nature of the attack of pain on the night of July 26. Assuming that the description is accurate there is only one condition which would with any great regularity cause the symptoms, and that is perforation of some portion of the intestinal tract, in this position practically always the stomach or the duodenum. One probably ought to consider the possibility of acute hemorrhagic pancreatitis, though this is rarely accompanied by such overwhelming pain. A further possibility is perforation of an acutely inflamed gall-bladder. It would however be very unusual not to have some previous history suggesting a lesion of the right upper quadrant. It is probably wise to note that in any acute abdominal emergency the possibility of acute appendicitis should be considered. There is almost no portion of the abdomen in which the symptoms may not appear. On the other hand this is an unusually overwhelming onset for any type of acute appendicitis, and this fact taken with his age, which militates somewhat against appendicitis, and the confinement of the pain to the epigastrium, is probably sufficient to exclude it.

The development of the symptoms does not give us much assistance, as it followed the course of a spreading peritonitis of great severity. The utter failure of enemata simply shows the overwhelming character of the infection with accompanying intestinal paralysis.

He was first seen a matter of seventeen or eighteen hours after the onset of symptoms, and if the lesion was in fact a perforation one may assert without much danger of being wrong that the delay was in itself fatal. The prognosis of perforations when operated upon in the first six hours is excellent, in the first twelve hours fair,

#### CASE 10522

##### SURGICAL DEPARTMENT

A Polish laborer of sixty-five entered July 27. He spoke no English.

F. H. Not obtained.

P. H. He had suffered from "asthma" for years. He had lost no weight.

P. I. July 26 at eleven p. m. he was seized with overwhelming epigastric pain. When the doctor arrived two hours later the patient was vomiting green liquid in small amounts and was in an agony of abdominal pain, the abdomen distended and spastic. He was given morphia gr. ½ s.c. and left until morning. When seen then by the doctor he was in less severe pain, with more distension and spasticity. The doctor gave six high enemas, with return of clear water from each. The last normal bowel movement was the morning of the 26th. The patient said he had had a normal movement every morning previously. He continued to vomit on the 27th, and at half-past four p. m. was brought to this hospital with a temperature of 99.8° by mouth, 100.4° by rectum, pulse 92, respirations 24, leucocytes 20,000. A catheter was passed and 5 xvii of high-colored slightly cloudy urine drawn, negative in all respects.

P. E. A lethargic, slightly cyanotic old man moaning faintly. Teeth poor. Pyorrhea. Chest barrel shaped. *Heart.* Location of apex impulse and measurements not recorded. Sounds not of good quality. No murmurs. Artery walls palpable and tortuous. B. P. 120/90. *Lungs.* Dullness, squeaks and moist râles at both bases posteriorly. *Abdomen.* Distended, tense, tympanitic, spastic. Maximum tenderness and pain to the right of and above the umbilicus. Liver dullness obliterated. No evidence of fluid in the

after that time progressively bad. The effect of delay upon acute pancreatitis is much less striking, though the lesion itself is highly fatal. I am not clear that a delay such as occurred here importantly affects the prognosis of this latter lesion. If we continue to consider the possibility of a perforation of the gall-bladder, delay in this lesion, though not quite so serious as in perforation of the stomach, is much to be deplored.

I think I will risk a diagnosis of acute perforation of the stomach or duodenum. The indication for operation is clear, but the prognosis must be regarded as bad.

#### DR. CABOT'S PRE-OPERATIVE DIAGNOSIS

Acute perforation of the stomach or duodenum.

#### PRE-OPERATIVE DIAGNOSIS

Perforated gastric ulcer.

#### OPERATION

Local novocain. Ether.—Under novocain the abdomen was opened with a high right rectus incision with the escape of gas. There was some free fluid in the upper abdomen, quite characteristic of gastric contents. The stomach was extremely high under a large left lobe of the liver. An attempt was made to deliver the stomach under local anesthesia, but the patient complained of so much pain that general anesthesia had to be used. A small perforation was found in the duodenum very close to the pylorus, very well walled off; the adjacent peritoneal cavity was hardly soiled. The perforation was repaired by plicating the intestinal wall surrounding the perforation and a small piece of omental fat was placed over the sutured area. One drain was placed to the right upper quadrant and another along the right border of the peritoneal cavity. Condition of patient at end of operation not good.

#### FURTHER DISCUSSION

The operative findings are not quite so severe as the picture led me to suppose. One would gather that the evidence of peritonitis was very slight and that the walling off was satisfactory. This does not quite fit either with the evidence of free gas in the peritoneal cavity, which of course means that it was not walled off, or with the evidence of intestinal paralysis, which is not ordinarily produced by the perforation of walled-off lesions. My guess is that the infection of the general peritoneal cavity will prove to be larger than the description would lead one to suppose. His death was probably importantly due to complications above the diaphragm. These however must be regarded as part and parcel of his infection, since they could hardly be a direct consequence of the operation. While I have no doubt that a failing heart with edema of the

lungs and perhaps bronchopneumonia played a definite part, I think the death should be charged directly to infection of the peritoneal cavity. I shall be surprised if considerable peritonitis is not found.

Necropsy should show arteriosclerosis, hypertrophy and dilatation of the heart, hypostatic pneumonia or a bronchopneumonia, and peritonitis.

#### CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Perforated duodenal ulcer.  
Bronchopneumonia.  
Peritonitis.  
Laparotomy.

#### DR. HUGH CABOT'S DIAGNOSIS

Acute perforation of the duodenum.  
Arteriosclerosis.  
Hypertrophy and dilatation of the heart.  
Hypostatic pneumonia or a bronchopneumonia.  
Peritonitis.

#### ANATOMICAL DIAGNOSIS

##### 1. *Primary fatal lesion*

Ulcer of the duodenum with perforation.

##### 2. *Secondary or terminal lesions*

General peritonitis.  
Hemorrhagic edema of the lungs.

##### 3. *Historical landmarks*

Laparotomy.  
Chronic pneumonitis, upper lobe of right lung.  
Chronic pleuritis.  
Obsolete tuberculosis of one bronchial lymph node.

DR. RICHARDSON: The abdomen was moderately distended, the wall rather tense. In the region of the margins of the operation wound there was much purulent infiltration.

The peritoneal cavity contained at least 700 c.c. of purulent fluid material, and the peritoneum was coated with fibrinopurulent exudate. This was in greatest amount on the right side of the cavity.

The appendix, esophagus and stomach were negative. The small intestine was moderately distended and contained much brownish opaque fluid material. The mucosa was negative except at a point in the duodenum about 1½ cm. below the pylorus, antero-laterally to the right, where there was a loss of substance 1½ cm. by 8 mm. The margins of the ulcer were rounded and descended abruptly to a thin base which presented a perforation 5 mm. in diameter. The wall of the duodenum at this point was folded in, sutured, and a small patch of omentum was sutured over it.

The right lung was bound down by old pleural adhesions. The left lung showed old adhesions midway posteriorly.

The trachea and bronchi contained much reddish frothy fluid. One bronchial gland was slightly enlarged and showed much fibrocalcareous degeneration.

The tissue of the left lung generally showed hemorrhagic edema, but was otherwise negative. In the right lung beneath the thickened pleura in the region of the upper half of the upper lobe there was an area of chronic pneumonitis. The tissue elsewhere showed hemorrhagic edema.

The heart was rather large. The myocardium, valves, and cavities were negative. The coronaries were free and negative. The aorta and great branches showed only a slight amount of fibrous sclerosis.

A case of perforated ulcer of the duodenum with general peritonitis.

#### FURTHER DISCUSSION BY DR. CABOT

The findings at necropsy confirm the suggestions of operation. The moral of this case is perfectly clear, that delay in cases of perforation of the stomach or duodenum or where such perforation is suspected is a very risky business. It is undoubtedly better to operate in doubtful cases and occasionally to be wrong than to delay with the practical certainty of losing a patient after the lapse of say twelve hours. Of course the age of this patient was against him from the start and he might not have withstood operation even had it been promptly undertaken, but the delay was increasingly serious for that reason and undoubtedly was an important factor in his death.

#### CASE 10523

##### SURGICAL DEPARTMENT

A Scotchman of fifty-eight employed in a radio factory entered July 14.

F. H. Good as far as known, except that his wife died of "consumption of the bowel."

P. H. In his youth his left eye was blinded by a blow and his right leg removed following a fall. He had measles and German measles in youth. For thirty-six years his hearing had been bad in the left ear. He had many colds in winter. He had pains in the left knee on walking.

*Records of the Out-Patient Department.* Nineteen years before admission he was treated for stricture for seven months, and for pruritus of the scalp. Ten years ago he came for frequency and an attack of retention for which he was treated for nine months. The following year he came for acroparesthesia of the arms due to pressure of crutches. Four years ago

he was treated for nausea, vomiting and diarrhea; a diagnosis of acute gastroenteritis was made. February 5, the year of admission, he came for cough, which persisted until April. June 18. Pain in the right chest, helped by exercise and pressure, and a mass in the right upper quadrant. Operation was advised. June 24. Gastric discomfort. July 7. Dull pain in the right side of the back.

P. I. Five weeks before admission he was awakened from sleep by sharp knife-like pain in the right epigastrium radiating to the back, with remissions during which there was dull pain in the same region. The sharp attacks were severe enough to cause him to double up and roll on the floor. He had a good deal of gas. This attack lasted several days. A week before admission he had an attack of nausea and vomiting. Two days before admission he had an attack of pain similar to the one described.

P. E. An obese, wide awake, jocular old man of healthy appearance. Examination essentially negative except for a cataract in the left eye and tenderness and spasm on even slight pressure in the right upper quadrant, with a questionable mass. The right leg was amputated about the middle of the shaft of the femur.

Before operation *T.* 98.4°-100°, *P.* 98-68, *R.* normal; amount of *urine* not recorded, *sp. gr.* 1.006, no albumin or sugar; *blood* not recorded except leucocytes 9,600; *Wassermann* negative; *stool* negative.

July 16 operation was done. The patient showed very little reaction, and next day was voiding. July 19 he began to have hiccups and some distension, relieved by an enema. The wound was draining well. July 28 it was wide open, with the through-and-through stitches still in place but pulled. There was a moderate amount of pus. The wound was cleaned and another dressing applied. After operation the urine was cloudy at one of nine examinations, *sp. gr.* 1.020-1.004, a slight trace to a very slight trace of albumin at three.

The morning of July 30 while having his shirt changed the patient suddenly grew rigid, with stiff arms and neck, and was unable to speak. When seen about twenty minutes later he looked pale but was able to talk, although not rationally. The leg reflexes were normal. The nurse said that he had been acting strangely before this. Before the middle of the afternoon he had two more attacks, during the second of which he was observed. He had a convulsion with clonic contractions of both arms. The first attacks affected the right arm only. The leg was not affected in any attack. The mouth was firmly closed, requiring a mouth gag. The attacks lasted about a minute. He had no memory of them. Between them he could talk with difficulty. There was no resid-

ual paralysis. By the next day he had had three more such attacks. He seemed disoriented. August 1 a medical consultant reported, "... No physical signs made out except absent left knee-jerk." The patient continued to have convulsions and in the intervals was not so lucid as before. The right side seemed weaker than the left.

August 3 he made ruminating mouth motions and was practically stuporous all the time, without convulsions. August 4 lumbar puncture in two different spaces gave bloody fluid. August 5 the leucocyte count was 12,600. August 6 he was in semicomma. His heart was negative. The blood chemistry was normal. August 7 he was unconscious all day, with involuntary excretions. No evidence of paralysis was made out. The temperature, pulse and respirations rose gradually. That day he died.

#### DISCUSSION

BY DR. EDWARD L. YOUNG, JR.

This is a five weeks' history except for the condition that brought him to the hospital four years before, when he had an attack of nausea, vomiting and diarrhea. But apparently at that time there was nothing to suggest localization of trouble in the right upper quadrant, and we are given no history of any indigestion between times. So that sharp knife-like pain in the right epigastrium radiating to the back, with remissions during which he had dull pain in the same region, is the first thing. We are not given any story of jaundice then or at any time. Of course the first thing to consider with that story is gall-bladder, because an acute cholecystitis with or without stones would probably be the commonest cause of an attack such as is spoken of here. He had had a mass a month before in the right upper quadrant, and operation had been advised. With a mass we always wonder if there is involvement of the stomach with malignant disease, but it is hard to fit that into the picture. It is more suggestive of a stone in the cystic duct, with enlarged gall-bladder behind it, felt at that time and again when he comes in here. Of course you cannot, just on the story, rule out an attack of kidney pain, because more than half of the kidney cases do not have renal colic; they have the more atypical types of pain, and the presence of gas is a very common symptom with trouble with the kidney.

The examination then as far as it goes points towards gall-bladder. With a tenderness in that region as definite as this it could hardly be due to kidney or to trouble in the stomach. We should not expect it to be due to pancreatitis without more evidence. So that the diagnosis of gall-bladder would seem to be borne out.

This is only a single record of the urine, so that the very low specific gravity does not tell us a great deal.

Apparently no other evidence was required by those who saw him. The X-ray evidence is extremely important, and of course we mean by that both the direct and the indirect evidence. The presence of shadows shown by gall-stones is not very accurate. I do not know what the percentage is here; it varies from five to thirty per cent., depending on how optimistic the X-ray man is. The indirect evidence is more often what we have to consider. The evidence of distortion of the pyloric end of the stomach or duodenum from adhesions of an inflamed gall-bladder, from the pressure of an enlarged gall-bladder, the change through the fluoroscope in the fixity and motility of the stomach and duodenum, all are very good evidence indirectly of the presence of trouble in the gall-bladder. Here the tenderness was so definite, the evidence was so plain, that apparently that was not considered necessary. I should assume that the diagnosis was gall-bladder as we read it here. I do not see how we could seriously consider the other things that I have mentioned. Does anyone want to differ from that diagnosis? Because the operation will tell us whether we are right or not. Of course without jaundice we should assume either a catarrhal condition in the gall-bladder or cystic duct without obstruction, or stone in the cystic duct. Of course we have long since ceased to feel the need of finding a calculus in order to complete the picture of gall-bladder trouble.

A SURGEON: Do you use the sodium salt of tetrabromophenolphthalein in your gall-bladder work?

DR. D. S. BEILIN: We have used it in five or six cases. We had some bad reactions and discontinued it for the time being.

DR. YOUNG: In what way were they bad?

DR. BEILIN: The house officers said that the patients were very sick, had marked chills, and were in a pretty bad way.

DR. YOUNG: I think the thing is still in a more or less experimental stage anyway. I think I will let the other fellow experiment with it. Isn't it true that any gall-bladder that can be visualized in the X-ray is pathologically thickened or else contains an abnormal bile?

DR. BEILIN: That is the theory of Dr. George.

DR. YOUNG: Do you go on that basis here?

DR. BEILIN: Some do and some do not. One of our men who came from the Mayo Clinic does not agree with that theory. I have the same opinion, that a gall-bladder is not necessarily pathological when it shows on a film.

DR. YOUNG: Have they checked that up?

DR. BEILIN: Yes. They have done a series of 2500 cases and 500 cases operated on seemed to check up their work very accurately.\*

\*Carman, McCarty and Camp. Roentgenologic diagnosis of cholecystic disease. *Radiology*, Vol. II, February, 1924.



A PHYSICIAN: Do you use pneumoperitoneum?

DR. YOUNG: Yes, it was used for various things a few times when it first came out.

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Acute cholecystitis, or  
Stone in the cystic duct.

PRE-OPERATIVE DIAGNOSIS

Cholecystitis, acute.

OPERATION

Gas and ether. Upper right rectus muscle splitting incision. The peritoneal cavity was opened without incident. The liver was found to be lying well under the costal margin, and the gall-bladder, which was covered over with thick omentum, was under the eleventh rib.

With some difficulty the omentum was separated from the gall-bladder, which was ruptured in this process, allowing the escape of several cubic centimeters of bile and thin pus. The whole gall-bladder was found to be gangrenous. A cholecystectomy was done from above downward. Two cigarette drains were placed to the gall-bladder bed. A large stone was found in the gall-bladder itself. There was some edema of the wall of the common duct. No stones could be found. The wound was closed in layers. Drainage, two cigarette wicks.

FURTHER DISCUSSION

They make the same diagnosis of acute cholecystitis.

It would be interesting in this case if they had demonstrated a large thickened gall-bladder where this mass was felt, because from this description here it follows very accurately the law of Courvoisier; with the chronic inflamed gall-bladder due to stone there results a contracted gall-bladder. I do not believe the mass felt here was ever gall-bladder. I imagine it was another one of these cases in which they wanted to feel something and therefore did.

A still lower specific gravity, but also a very high one, showing that the kidneys were in good shape and able to concentrate.

From the surgical point of view I should assume that he had a cerebral hemorrhage. Then I should have called for Dr. Taylor, and since he is here I am going to ask him what he has to say about that picture.

DR. TAYLOR: Is there any record of blood pressure?

MISS PAINTER: The blood pressure is 170/80.

DR. TAYLOR: That isn't a grossly abnormal blood pressure for a man of fifty-eight.

DR. YOUNG: Is there anything to say from the neurological point of view upon that story?

DR. TAYLOR: He must have had some intracranial difficulty, whether actual hemorrhage or

not it is difficult to say. It may be an edematous condition. The disturbance was not always in the same place. Am I wrong in that?

DR. YOUNG: I should say from the story that is true.

DR. TAYLOR: An irritative sort of affair rather than a destructive one apparently. Blood in the fluid seems to indicate a disturbance near the cortex; that there must have been some free blood subdurally.

DR. YOUNG: Should you expect that a hemorrhage would have left him without residual paralysis between times?

DR. TAYLOR: Depending on where it occurred. If it occurred outside the motor area it would.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Empyema.  
Cholelithiasis.  
Cerebral arteriosclerosis.  
Cerebral emboli.  
Operation, cholecystectomy.

DR. EDWARD L. YOUNG'S DIAGNOSIS

Cholelithiasis.  
Cerebral hemorrhage?

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesion*  
(Cholelithiasis.)
2. *Secondary or terminal lesions*

Pulmonary embolism.  
Wet brain.  
Minute concretion in common bile duct.

3. *Historical landmarks*

Cholecystectomy.  
Slight chronic pleuritis, left.  
Chronic interstitial orchitis.  
Old thigh amputation.

DR. RICHARDSON: The pia was markedly infiltrated with thin pale fluid. The brain tissue was a little wet. The vessels of Willis, sinuses and middle ears were negative.

The subcutaneous fat was in large amount.

There were only a few pleural adhesions on the left. The trachea and bronchi contained much pale froth. The tissue of the upper lobes of the lungs showed a moderate amount of edema. The tissue of the lower lobes was brown-red, spongy to leathery, and yielded bloody frothy fluid in small amount.

The heart weighed 365 grams, with negative valves, cavities and coronaries. There was only a slight amount of arteriosclerosis in the aorta and its great branches. The pulmonary artery was occluded by a mass of frank branching emboli.

DR. RICHARDSON: From the anatomical

standpoint I should think there was a succession of emboli. Usually it is one long embolic coil or a number of long coils, but in this case there was a heap of short ones.

The cystic duct was tied off. It was slightly dilated. The common duct was slightly dilated and contained one small concretion. The pancreas, spleen, kidneys and liver were negative except for congestion of the liver, spleen and kidneys.

DR. YOUNG: Does the wet brain account for the cerebral symptoms?

DR. TAYLOR: I think so. I do not yet see why there was no explanation of the blood in the spinal fluid. Dr. Viets would know more about that than I.

DR. VIETS: It may be that they tried two different spaces. It is a poor report; it doesn't actually say. If they had penetrated the subarachnoid space and got fluid I think they would have done some of the other tests that we do. I think these were bloody taps without obtaining any spinal fluid.

## CURRENT LITERATURE

### ABSTRACTORS

GERARDO M. BALBONI	TRACY MALLORY
WILLIAM B. BREED	HERMAN A. OSGOOD
LAURENCE D. CHAPIN	FRANCIS W. PALFREY
AUSTIN W. CHEEVER	EDWARD H. RISLEY
RANDALL CLIFFORD	GEORGE C. SHATTUCK
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FRED S. HOPKINS	WILDER TILSTON
CHESTER M. JONES	HENRY R. VIETS
CHARLES D. LAWRENCE	SHIELDS WARREN
BRYANT D. WETHERELL	

### JOURNAL OF MEDICAL RESEARCH, SEPTEMBER, 1924

PAPPENHEIMER, A. M., and VONGLAIN, WILLIAM C., present a histological study of the aorta in 76 cases of rheumatic fever and in 77 non-rheumatic cases. Dense, relatively acellular scars in the vicinity of the nutrient vessels and Aschoff bodies or nodules in the adventitia are the most distinctive lesions. These lesions are distinguished from those of syphilis by the slight cellular reaction and the absence of new-formed blood vessels. The rheumatic lesions, being limited to the preëxisting vessels, rarely are found extending to the intima, while syphilitic lesions frequently do. Several excellent plates are given.

SCHROEDER, META L., observed that a higher titer of antishcep hemolytic amboceptor was given by rabbits accidentally infected with subcutaneous abscesses than by normal or experimentally infected animals.

GOSLING, R., and MONTANUS, J., inoculated spinal fluids from cases of tuberculous meningitis on Dorset's and Lubenau's egg medium, and also injected guinea pigs. Seventy-three per cent. of 34 fluids yielded positive cultures. Out of a total number of 48 fluids found positive by various methods, only three yielded bacilli of the bovine type.

DAVIS, L. E., presents a case of villous hypertrophy of the choroid plexus, together with studies on the

choroid from cases of intracranial tumor, obstructive and "essential" hydrocephalus. The evidence is that the choroid plexus forms cerebrospinal fluid as the kidney does urine. The granules in the cells of the choroid are not secretory, but are mitochondria.

SOPHIE, O., and KARNER, H. T., believe that segmentation and fragmentation of the myocardium, frequently encountered in microscopic sections of the heart muscle, are not artefacts, but the result of distention of the heart. The intercalated discs appear to be the point of lowered resistance, and separation of the fibers usually occurs there.

LOEB, L., and KAPLAN, E. E., bring forward new evidence for the interrelation of the anterior lobe of the pituitary gland and the thyroid gland. In guinea pigs with most of the thyroid extirpated, the remaining portion undergoes compensatory hypertrophy. When extract of the anterior lobe of the pituitary is fed, however, no compensatory hypertrophy of the thyroid remnant occurs.

WHITMAN, R. G., and STEIN, H. B., report a case of degenerative change of the intima of the aorta (mesarteritis dissecans) without dissecting aneurysm.

WEISKOTTEN, H. G., WYATT, T. C., and GIBBS, R. F. D., report further results in the action of benzol on the bone marrow. They find an initial increase in the number of thrombocytes following the subcutaneous injection of olive oil-benzol mixtures in rabbits. There is a gradual decrease in the number coincident with the necrosis of the bone marrow, and active marrow regeneration is accompanied by a marked thrombocytosis. They consider this additional evidence for the bone marrow origin of thrombocytes.

DAVIS, NELSON C., reports a series of experiments on the toxicity of carbon tetrachloride. This efficient anthelmintic is not so devoid of danger to the patient as was first thought. Davis finds that diet has a great influence on the toxicity of this drug. Mixed diets and high protein diets are protective to some degree, while a high carbohydrate diet affords much protection. Starvation is harmful. The maximum amount of liver injury is produced when the animal is on a high fat diet.

BURROWS, M. T., concludes from extensive studies that our present ideas of first intention healing are erroneous. Clean wounds heal either by extension of an epithelial membrane with granulation tissue beneath, where the skin is adherent to underlying structures, or a gross moving together of the edges of the wound and later cementing together of the edge by granulation tissue, where the skin is freely mobile. He believes that the stimulus for growth after injury is the destruction of blood vessels and the inflammatory slowing of the circulation. From this he deduces the cause of cancer to be any substance or conditions which lead to the proper primary change in the arrangement of cells and blood vessels in the organism.

[S. W.]

### SARCOMA OF BONE

MACGUIRE, C. G., JR., and MCWHORTER, J. E. (*Archives of Surgery*, Part 1, November, 1924).

These authors present an analysis of 50 cases. This is an excellent detailed analysis with tables showing age, sex, location, duration, symptoms and physical signs, medical diagnosis, X-ray examination and diagnosis, pathological examination, treatment, and results, including follow-up. There are many excellent drawings and plates of pathological tissue. This article represents an interesting study of this subject.

[E. H. R.]

# Case Records

ANTE-MORTEM AND POST-MORTEM

AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

AT THE

MASSACHUSETTS GENERAL HOSPITAL

EDITED BY

RICHARD C. CABOT, M.D.

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AND

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WITH THE ASSISTANCE OF

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EDWARD L. YOUNG, Jr., M.D.

Cases also discussed by

MAURICE FREMONT-SMITH, M.D.

FRITZ B. TALBOT, M.D.

WILLIAM H. SMITH, M.D.

W. JASON MIXTER, M.D.

LINCOLN DAVIS, M.D.

EDWARD P. RICHARDSON, M.D.

LLOYD T. BROWN, M. D.

and others

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FLORENCE M. PAINTER, A.B., Assistant Editor

VOLUME X

1924

# Case Records

Volume 1, 1880-1881

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## THE BOSTON Medical and Surgical Journal

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### THE SPIRIT OF SERVICE

THE Christmas season, with its message of Peace on Earth, Goodwill to Men, has come again.

Physicians share the spirit of service pervading this blessed time with all mankind. Doctors hold this spirit dear, cherishing it as the peculiar ideal of their high calling.

This has received an inspiring demonstration recently in Massachusetts. The medical friends of a family doctor gathered to do him honor. As a young man, he was filled with a spirit of helpfulness to the poor, the sick, and the needy in manifold ways. He was possessed with an earnest desire to do something to advance the art of healing. To this end he dedicated his life.

Carlyle's words, "The heart goes further than the head," have been tested by the lives of Livingstone, the Bowditches, father and son, Grenfell, Walter Reed, Trudeau, Walter Fernald, Howard Kelly, Alfred Worcester—doctors all. These men and a great company of noble men and women like them have counted no sacrifice too great if so they might achieve. They were pathfinders and crusaders, dauntless foes to sham, dead theories, out-worn and false practices. They braved opposition,

misunderstanding and detraction, humbly following in the footsteps of a poor carpenter of Palestine, whose short life is "the most stupendous fact in the history of the world"—whose birth is the inspiration of Christmastide.

ENOS H. BIGELOW,

*President of The Massachusetts Medical Society.*

### THE ANNUAL DIRECTORY

THE annual directory of the Massachusetts Medical Society will be distributed to all paid-up Fellows soon after the first of January by the JOURNAL, as in recent years. Fellows should realize that they are receiving an up-to-date publication, one that has been trued up to December 31, 1924, by painstaking consultation of the telephone directories of the entire state, by "query cards" sent out in profusion, by telephone inquiries to addresses which were in doubt, and by the coöperation of the JOURNAL mailing list and the treasurer of the Society, especially in the matter of the changing addresses of our 288 non-resident members. So far as known no other state medical society has such an annual directory, most societies contenting themselves with the names of their members and the towns in which they practice. With us the Fellows are listed according to their legal residences, so far as known. The office addresses, street and number, appear whenever obtainable. Those who are not satisfied with the district listing are transferred by vote of the Council to the district they prefer, a perfectly fair arrangement and one made necessary by the increasing movement of practitioners to the cities for their offices. It is to be hoped that the treasurers of the District Medical Societies will not send out their annual bills for dues until after they have consulted the directory of January 1, 1925, thus avoiding confusion in the case of those Fellows who have moved recently—there are always many of these. This year the directory appears in octavo form, as it was issued previous to the year 1915. This size and shape adapts it to preservation and to more ready use. The officers feel sure that the directory is of great value to the Society for many reasons and justifies the large amount of labor expended in its preparation. Once a year the whereabouts of every Fellow is noted. Aside from its value as a work of reference the directory indicates that an old society with an honorable record is still very much alive and looking after its membership.

### PROPOSED CHANGES AFFECTING REGISTRATION OF PHYSICIANS AND OTHERS

THE recess committee of the legislature, appointed to study every aspect of the organiza-



tion, practice and procedures of the various divisions of registration, has filed its report.

This report is the result of information acquired through hearings, and study of the work and organization of the several registration boards.

The committee consists of three members of the Senate, E. S. Draper, Chairman, Abbott B. Rice and W. J. Francis, and six from the House, William J. Bell, Charles E. Abbott, Leverett Saltonstall, H. A. Estabrook, W. H. Hannagan and Edward J. Kelley.

The committee is committed in the report against the recognition of chiropractic and midwives and recommends shortening the required period of training for nurses to two years.

A brief resume of the recommendations relating to the registration of physicians is as follows: For the general control of the boards of registration there shall be a Board of Registration, within the department of civil service and registration, consisting of seven persons to be appointed by the governor, the chairman to be named by the governor. The Board of Registration will have supervision of the Division of Registration in the Department of Civil Service and Registration.

This Board of Registration must meet at least twice a year and will have an executive secretary; it shall have full control of the subsidiary boards, set up educational and other qualifications of applicants for registration, and pass on the character of the examinations. No two members of this board may represent any profession. This will be an unpaid board.

The existing boards shall be known as examining boards under the supervision of the Board of Registration, shall also conduct hearings, and report their findings to the Board of Registration. In case of appeal from the decisions of the subsidiary boards a committee of the Board of Registration shall review the findings of the subsidiary board and, if unable to come to a unanimous decision, a hearing by the full Board of Registration will be held.

The present boards acting as examining boards and entrusted with primary duties and decisions shall report the results of their activities to the Board of Registration. Certificates of registration shall be issued by the Board of Registration, which also controls the financial affairs of the division.

The compensation of the examining boards is to be fixed by the Board of Registration with the approval of the governor and council.

For the purposes of investigation five inspectors are asked for and the position of the Director of Registration is to be abolished. His functions will probably be carried on by the executive secretary.

Two bills, as appendices to the main bill, are submitted, in which there are additions to the main bill. In reading the recommendations one must keep in mind that the supervisory board is called the Board of Registration and

the present Board of Registration in Medicine retains its present name.

Aside from the general features of these recommendations the great outstanding and important requirement is that of giving to the Board of Registration authority to determine which are approved medical schools. The existing requirements that applicants for medical registration must have had a preliminary education equal to that required for graduation from a high school and graduation from a medical college which gives a full four years' course are retained in the proposed bill, and, in addition, the further requirement that the Board of Registration may accept only applicants who are graduates of colleges approved by the board.

This latter provision will be the storm center when the report is considered in the legislature, because it will arouse the opposition of those who have for many years induced the legislature to decline to enact laws which would enable this state to take its proper position among the great majority of the states of the nation.

It is encouraging to find that the majority of this very important committee favors raising the standard of medical practice.

In the report the statement is made that Senators Rice, of Newton, and Francis, of Charlestown, dissent from some of the recommendations and will file a minority report setting forth their objections. This is the logical sequence of the attitude of these gentlemen.

The opportunity exists for a clear presentation of the wisdom of this proposed law to the members of the legislature. If physicians who are interested in higher standards of medical practice will interview their senators and representatives there is a reasonable prospect of lifting Massachusetts out of the unpleasant position of endorsing inadequate medical education.

The creation of a managing board composed of eminent men, not more than one being a physician, will relieve many objectors of the suspicion that the present board represents a medical trust.

#### DEVIL'S GRIP

*The London Medical Press and Circular* recalls Dr. William C. Dabney's "Account of an Epidemic Resembling Dengue," published in 1888, and describing an epidemic which occurred in and about Charlottesville, Virginia, in that year. The characteristic symptom which gave the disease its name was an agonizing pain on attempting to move or draw a deep breath. During the summer of 1923 a similar epidemic with chill, fever and severe pain in the chest or epigastrium occurred in Virginia and spread to Philadelphia, New York and other parts of the United States.

Our chief advance in any knowledge of this condition consists in the possible finding of a protozoan organism in the blood, and the labeling of the disease as epidemic pleurodynia.

## NEW PUBLICATION

THE first issue of a new periodical, the "*Journal of Clinical Investigation*," appeared in October. This journal was founded by the American Society for Clinical Investigation and is edited by Dr. G. Canby Robinson, professor of medicine at Vanderbilt University, under a grant to the society by the Rockefeller Institute for Medical Research.

## MISCELLANY

## CORRECTION

IN the death notice of Dr. Russell Bradford Sprague which appeared in the December 11th issue of the JOURNAL on Page 1145, the date of his death should have been given as December 2, 1924, instead of December 21.

PHYSICIANS REGISTERED DECEMBER 11, 1924.  
BY THE MASSACHUSETTS BOARD OF REGISTRATION IN MEDICINE

Baker, Henry Merton, Drawer D, Taunton, Mass.  
Balch, Franklin Greene, Jr., 109 Moss Hill Road, Jamaica Plain, Mass.  
Basso, Joseph Charles, St. Mary's Hospital, Brooklyn, N. Y.  
Bernstein, Aaron Oscar, 207 Osborne Street, Brooklyn, N. Y.  
Brewer, James Franklin, Jr., Sassaquin Sanatorium, Clifford, Mass.  
Carrigan, Paul William, 429 Shawmut Avenue, Boston, Mass.  
Cohen, Louis, 312 Chelsea Street, East Boston, Mass.  
Dartley, Seth, 98 Waltham Street, Boston, Mass.  
Dean, Archibald Sweetland, Route 3, Woodfords, Me.  
Dukakis, Panos Stelianou, Boston City Hospital, Boston, Mass.  
Elliott, John Lawson, 313 Essex Street, Salem, Mass.  
Farrell, Irving Augustine, 15 Nickerson Street, Pawtucket, R. I.  
Fessenden, Raymond, 3 Wesley Park, Somerville, Mass.  
Gile, Harold Hatch, 10 Park Drive, Brookline, Mass.  
Goodale, Robert Lincoln, 258 Beacon Street, Boston, Mass.  
Hannigan, Robert C., St. John's Block, Biddeford, Me.  
Hutchison, Kenneth Thomas, 80 East Concord Street, Boston, Mass.  
Kimberly, Arthur Myndert, 805 Pleasant Street, Worcester, Mass.  
Lage, Fausto Pereira, 537 Purchase Street, New Bedford, Mass.  
Laub-Gross, Victor Fred Henry, 82 East Concord Boston, Mass.  
Lennox, William Gordon, 18 Hollis Street, Newton Mass.  
Macdonald, Ronald Joseph, 41 Hinckley Street, Somerville, Mass.  
MacGillivray, Donald Joseph, New Britain General Hospital, New Britain, Conn.  
McGuinness, John Francis, 175 East Sixty-eighth Street, New York, N. Y.  
McKeough, Wilfred Aloysius, United States Marine Hospital No. 2, Chelsea, Mass.  
Mendoza, Luis Antonio, 6440 Woodlawn Avenue, Chicago, Ill.  
Mitchell, Harold Hubbard, City Hall, Fall River, Mass., Room 35.  
Moore, Cecile Stieler, 53 Faxon Street, East Boston, Mass.  
Morris, Robert Hartshorne, New York Hospital, New York, N. Y.

Morrison, Lawrence Raymond, St. Luke's Hospital, New Bedford, Mass.  
Muller, Joseph, Rutland State Hospital, Rutland, Mass.  
Ostrer, Harry, 28 Lynde Street, Boston, Mass.  
Owen, John Fletcher, Medford State Hospital, Harding, Mass.  
Rogers, William Alexander, 24 Shepard Street, Cambridge, Mass.  
Rosenstein, Salvel, 1414 Eastern Parkway, Brooklyn, N. Y.  
Smith, Harry, 136 Harvard Street, Malden, Mass.  
Smith, Samuel, 136 Harvard Street, Malden, Mass.  
Sweeney, Crawford Kenneth, 21 Crocker Street, Somerville, Mass.  
Teff, Richard Carlisle, Jr., 2 Netherlands Road, Brookline, Mass.  
Torney, Leonard Llewellyn, Worcester State Hospital, Worcester, Mass.  
Vurgaropoulos, Xenophon Arthur, Waltham Hospital, Waltham, Mass.  
Walte, John Herbert, 1087 Beacon Street, Brookline, Mass.  
Weidman, Abraham, 183 Columbia Street, Cambridge, Mass.  
Zervas, Themistocles, P. O. Box 880, Pittsfield, Mass.

NATIONAL BOARD, ACCEPTED DECEMBER 11, 1924

Burish, John Livingston, Worcester City Hospital, Worcester, Mass.

SPECIAL EXAMINATION DECEMBER 5, 1924, ACCEPTED  
DECEMBER 11, 1924

Johnston, Catharine, Reformatory for Women, Framingham, Mass.

APPLICANTS REJECTED IN THE NOVEMBER EXAMINATION.  
YEAR OF GRADUATION

Montreal, 1924.  
Boston Physicians and Surgeons, 1923.  
Chicago Medical, 1924.  
Meharry, 1921.  
Middlesex, 1923-23-23-24-23-23-24.  
Dorpot University, Russia, 1915-23.  
University of Lisbon, 1917.  
University of Cadova, Italy, 1917.  
Royal University, Naples, 1914-21.  
University of Crimea, Russia, 1922.  
Massachusetts Osteopathic College, 1922-22-23-23-23-24-24.  
St. Louis College of Physicians and Surgeons, 1922-23-23-23-23-23-24-24.

## A PROJECTED MEDICAL CENTRE

FOR the past three years the Joint Administrative Board of Presbyterian Hospital and the School of Medicine of Columbia University have been preparing plans for the establishment of a medical centre on the site of the old American League baseball park, at 165th Street and Broadway. The money for Columbia's part of the building program has been assured, and last week the Presbyterian Hospital inaugurated a campaign for \$4,500,000 needed to complete its share of the proposed \$10,000,000 building.

On this site, if the plans go through, will be an assemblage of medical institutions representing teaching, research and every major branch of healing. Here in one building scheme it is proposed to bring together hospitals, medical and dental schools and scientific laboratories.

Such a building scheme would make the 165th Street site the greatest medical centre on earth. Moreover, the plan goes far beyond present

ideas as to what constitutes a medical centre. Heretofore a group of medical institutions has been known as a medical centre if the buildings were in the same neighborhood and convenient to one another. What is planned for New York City by the Columbia-Presbyterian authorities is a medical centre under the one roof. This degree of coördination of effort does not exist at present in any other city, although it is in prospect at Rochester, N. Y.

Ever since 1909 the Presbyterian Hospital has been a "teaching hospital," through affiliation with the School of Medicine of Columbia University. Members of the hospital staff are selected from the Medical School Faculty, thereby securing to the hospital the services of men of university ability and standing. Under this arrangement, however, classroom and hospital were situated far apart. Furthermore, Presbyterian Hospital could accommodate only a limited number of students of clinical work, having had no new buildings in the last thirty years. This lack obliged many Columbia medical students to obtain first-hand observation of practical medical treatment in various scattered hospitals. It was felt that this condition made a unified educational policy difficult.

Gradually developed the dream of a great medical centre, bringing school and hospital together. Discussions to this end began in 1917. In 1921 a joint board was established to draw up plans. It selected as its executive officer Dr. C. C. Burlingame, a manager of silk mills as well as the holder of a degree in medicine. He made a thorough study of hospitals and medical centres in this country and Europe before plans were drawn.

The plans call for the expenditure of \$10,000,000 in a medical centre building. One feature of the hospital section is that each floor is a small hospital in itself, with its own wards, operating staff, equipment, sun parlors, minor laboratories and diet kitchens.

Two advantages are pointed out in such an arrangement. In the first place, it is held, the patient will not feel lost in a vast institution. It is thought also that the ten small hospital units superimposed upon one another will cause great economy in operation, for when the hospital is not filled to capacity some of the floors can be closed. Another innovation is hotel service, with bedroom and dining room for relatives of patients desirous of remaining overnight at the hospital.

#### OTHER INSTITUTIONS MAY JOIN

So flexible are the plans for the medical centre building that if other institutions now established elsewhere are willing to move they will be welcomed. These additions, it is hoped, will include a general out-patient clinic, a maternity hospital, a dental school, a children's hospital, a neurological institution and a psychopathic hospital. Conferences toward the

affiliation of other institutions with the Columbia-Presbyterian centre are under way and their results will be announced during the coming Winter.

Of the estimated building fund, \$3,000,000 is for construction of a school of medicine and \$7,000,000 for the general hospital. More than half of the desired \$10,000,000 was assured before the Presbyterian Hospital campaign was started. Columbia University's quota will be filled by \$1,000,000 each from the Carnegie Foundation, the General Education Board and the Rockefeller Foundation. Presbyterian Hospital has about \$2,500,000 of its building quota. The site, about twenty acres, between Broadway and Riverside Drive at 165th Street, has been provided by Edward S. Harkness, a member of the joint board, and his mother, Mrs. Stephen B. Harkness.

The illness of an old negro servant of one of the foremost New York physicians of a generation ago was the indirect cause of the founding of Presbyterian Hospital. When Dr. Oliver White's servant was turned away from a hospital on account of her color he told James Lenox, the philanthropist, that the city should have a hospital that would be open without restriction to every person in need. The result was that when Mr. Lenox founded the Presbyterian Hospital in 1872 he caused a tablet to be placed in a conspicuous place in the building announcing that the hospital was "for the poor of New York without regard to race, creed or color."

The present buildings of East Seventieth Street are declared to have outlived their usefulness. No new building has been added within the last thirty-two years, and patients are turned away from Presbyterian for lack of room. These considerations, as well as closer coöperation with the Columbia School of Medicine, prompted the Presbyterian Hospital managers to launch their present building fund campaign.—*New York Times*, Oct. 12.

#### REMOVALS

DR. WINFRED OVERHOLSER has moved from Medfield to Wellesley Hills. His office is Boston, Room 109, State House.

DR. HUGH B. RONEY's address in Pittsfield is now 69 Federal St.

DR. FRANK PIPER will have an office at 200 Devonshire St., Boston, after Dec. 1.

#### RECENT DEATH

DR. WILLIAM FRANCIS BARRY, President of the Rhode Island Medical Society, died in his automobile in Franklin, Mass., December 17, 1924, at the age of fifty-two.

Dr. Barry was born in Franklin and re-

ceived his early education in that town. He was graduated in medicine at the Baltimore Medical College in 1893 and settled in Woonsocket, R. I. He had been chairman of the School Committee and a member of the Board of Aldermen besides being a noted after-dinner speaker. He is survived by his widow and two children.

### OBITUARIES

#### A. R. WARNER, M. D.

ALTHOUGH Dr. A. R. Warner, Executive Secretary of the American Hospital Association, had been ill for nearly a year, his death came as a great shock, since he was apparently recovering. He died suddenly at his home in Deerfield, Illinois, November 27, from heart disease.

Doctor Warner was born in Pulaski, New York, in 1875. He graduated from Hamilton College in 1899 and from Western Reserve University Medical School in 1906. Subsequent to graduation, he practised medicine at Cleveland, Ohio, for a few years. The first hospital position Doctor Warner held was that of Assistant Superintendent of Lakeside Hospital, Cleveland, Ohio. In 1913 he became its Superintendent, a position he held until his appointment as Executive Secretary of the American Hospital Association, October 10, 1919.

Doctor Warner was always deeply interested and active in the development of organized hospital activities. He was one of the founders of the Cleveland Hospital Council and of the Ohio Hospital Association in 1918 and 1919. He was also instrumental in developing and organizing the American Conference on Hospital Service and served continuously as Vice-President of the Conference from the time of its organization. Doctor Warner was a Fellow of the American Medical Association.

From the beginning of his hospital career he was actively interested in the work of the American Hospital Association, serving on several of its important committees. In 1918 he was elected its President. His earnestness and enthusiasm in the organization of Hospital activities won for him not only nation-wide, but international, recognition.

#### WILLIAM STICKNEY, M. D.

DR. WILLIAM STICKNEY, a prominent surgeon of Rutland, Vermont, died suddenly of angina on December 2, 1924.

Born in Bethel, Vermont, in 1873, the son of William B. C. and Mary Hunton Stickney, he was educated at Dartmouth and graduated from the Dartmouth Medical School in 1903. Following his graduation he served as House Surgeon at the Boston City Hospital and the Boston Children's Hospital.

He then began the practice of his specialty in Rutland and became Surgeon of the Rutland Hospital and of the Proctor Hospital in Proctor. He took a prominent part in the development of both of these hospitals.

During the war he served with distinction, being sent to the front immediately on his arrival in France.

Many in Massachusetts have lost a valued friend. Vermont has lost one of its leading surgeons, cut off in the midst of a career which had been a signal success and which meant much to the community he served with skill and devotion.

### MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

#### RESUME OF COMMUNICABLE DISEASES NOVEMBER, 1924

##### GENERAL PREVALENCE

The diseases which showed an increase last month are on the increase this month: chickenpox, diphtheria, measles, pneumonia (lobar), scarlet fever and whooping cough.

	Nov., 1924	Oct., 1924	Nov., 1923
Chickenpox	906	352	1,201
Diphtheria	620	583	1,151
Measles	379	250	1,096
Pneumonia, lobar	404	299	269
Scarlet fever	937	742	1,018
Whooping cough	305	231	426

##### RARE DISEASES

*Anterior poliomyelitis* was reported from Barnstable, 2; Boston, 1; Rockland, 1; Wareham, 1; Weymouth, 1; Gloucester, 1; Haverhill, 1; Salem, 1; Arlington, 1; Cambridge, 1; Chelmsford, 1; Dudley, 1; Fitchburg, 1; Holden, 2; Milford, 1; Northbridge, 1; North Brookfield, 1; Worcester, 4; total, 23.

*Anthrax* was reported from Boston, 1; Peabody, 2; total, 3.

*Dog-bite requiring anti-rabic treatment* was reported from Belmont, 1; Boston, 2; Chelmsford, 3; Chicopee, 1; Ipswich, 4; Lowell, 8; Medford, 3; total, 22.

*Dysentery* was reported from Boston, 1.

*Encephalitis lethargica* was reported from Boston, 5; Chelsea, 1; Somerville, 1; total, 7.

*Epidemic cerebrospinal meningitis* was reported from Dartmouth, 1; Millbury, 2; New Bedford, 1; North Adams, 1; total, 5.

*Malaria* was reported from Chelmsford, 1.

*Pellagra* was reported from Boston, 2.

*Septic sore throat* was reported from Boston, 4; Fall River, 1; Lawrence, 1; New Bedford, 1; Somerville, 1; total, 8.

*Tetanus* was reported from Boston, 2; Malden, 1; Peabody, 1; Somerville, 1; Waltham, 1; total, 6.

*Trachoma* was reported from Boston, 3; Easton, 1; Everett, 1; total, 5.

*Trichinosis* was reported from Boston, 1.

##### DISTRIBUTION

#### All Communicable Diseases

	Nov., 1924	Nov., 1923
Total cases (all causes)	5,341	7,113
Case rate per 100,000 population	133.4	179.2

#### Certain Prevalent Diseases

	Nov., 1924	Nov., 1923
Diphtheria		
Total cases	620	1,151
Case rate per 100,000 population	15.5	29.0

Scarlet fever	296
Septic sore throat	7

Encephalitis lethargica	2	Scarlet fever	296
German measles	32	Septic sore throat	7
Gonorrhea	149	Syphilis	50
Hookworm	2	Suppurative conjunctivitis	11
Influenza	19	Trachoma	1
Malaria	1	Trichinosis	1
Measles	179	Tuberculosis, pulmonary	17
Mumps	79	Tuberculosis, other forms	25
Ophthalmia neonatorum	16	Whooping cough	149
Pneumonia, lobar	128		

[illegible]

CONNECTICUT DEPARTMENT OF HEALTH

**MORBIDITY REPORT FOR THE WEEK ENDING**

DECEMBER 6, 1924

(Including all cases reported before 11 A. M., Monday,  
December 8, 1924)

<b>Nov.,</b>	<b>Nov.,</b>
<b>1924</b>	<b>1923</b>

Diphtheria                      Scarlet Fever

Diphtheria	Scarlet Fever
Eastfield, County	

<i>Diphtheria</i>		<i>Scarlet Fever</i>	
Fairfield County		Fairfield County	
Bridgeport	16	Bridgeport	19
Fairfield	1	Danbury (C)	2
Norwalk	2	Fairfield	2
Shelton	1	Greenwich	1
Stamford (C)	3	Ridgefield	1
Stratford	4	Shelton	3
Hartford County		Stamford (C)	3
Berlin	1	Stamford (T)	1
Bristol	1	Stratford	2
Farmington	1	Hartford County	
Hartford	6	Bristol	2
New Britain	6		

<b>Nov.,</b>	<b>Nov.,</b>
<b>1924</b>	<b>1923</b>

New Britain	6	Hartford	7
Simsbury	1	Manchester	2
Litchfield County		New Britain	2

1.1 Nov., 1924	1.2 Nov., 1923
1.3 Dec., 1924	1.4 Dec., 1923
1.5 Jan., 1925	1.6 Jan., 1924
1.7 Feb., 1925	1.8 Feb., 1924
1.9 Mar., 1925	1.10 Mar., 1924
1.11 Apr., 1925	1.12 Apr., 1924
1.13 May, 1925	1.14 May, 1924
1.15 June, 1925	1.16 June, 1924
1.17 July, 1925	1.18 July, 1924
1.19 Aug., 1925	1.20 Aug., 1924
1.21 Sept., 1925	1.22 Sept., 1924
1.23 Oct., 1925	1.24 Oct., 1924
1.25 Nov., 1925	1.26 Nov., 1925
1.27 Dec., 1925	1.28 Dec., 1925
1.29 Jan., 1926	1.30 Jan., 1926
1.31 Feb., 1926	1.32 Feb., 1926
1.33 Mar., 1926	1.34 Mar., 1926
1.35 Apr., 1926	1.36 Apr., 1926
1.37 May, 1926	1.38 May, 1926
1.39 June, 1926	1.40 June, 1926
1.41 July, 1926	1.42 July, 1926
1.43 Aug., 1926	1.44 Aug., 1926
1.45 Sept., 1926	1.46 Sept., 1926
1.47 Oct., 1926	1.48 Oct., 1926
1.49 Nov., 1926	1.50 Nov., 1926
1.51 Dec., 1926	1.52 Dec., 1926
1.53 Jan., 1927	1.54 Jan., 1927
1.55 Feb., 1927	1.56 Feb., 1927
1.57 Mar., 1927	1.58 Mar., 1927
1.59 Apr., 1927	1.60 Apr., 1927
1.61 May, 1927	1.62 May, 1927
1.63 June, 1927	1.64 June, 1927
1.65 July, 1927	1.66 July, 1927
1.67 Aug., 1927	1.68 Aug., 1927
1.69 Sept., 1927	1.70 Sept., 1927
1.71 Oct., 1927	1.72 Oct., 1927
1.73 Nov., 1927	1.74 Nov., 1927
1.75 Dec., 1927	1.76 Dec., 1927
1.77 Jan., 1928	1.78 Jan., 1928
1.79 Feb., 1928	1.80 Feb., 1928
1.81 Mar., 1928	1.82 Mar., 1928
1.83 Apr., 1928	1.84 Apr., 1928
1.85 May, 1928	1.86 May, 1928
1.87 June, 1928	1.88 June, 1928
1.89 July, 1928	1.90 July, 1928
1.91 Aug., 1928	1.92 Aug., 1928
1.93 Sept., 1928	1.94 Sept., 1928
1.95 Oct., 1928	1.96 Oct., 1928
1.97 Nov., 1928	1.98 Nov., 1928
1.99 Dec., 1928	1.100 Dec., 1928

Ansonia	1	Plainville	1
Beacon Falls	1	Southington	1
		West Hartford	1

Gunnors	1	Thomaston	4
Meriden (C)	2	Middlesex County	
Milford	1	Cromwell	

New Haven	5	Cromwell	
Seymour	1	Essex	
Wallingford (B)	3	Portland	
Waterbury	9	New Haven County	
New London County		Cheshire	

Nov., 1924	Nov. 1925
---------------	--------------

New London County	2	Shrewsbury
Norwich (C)		Derby
Thames Valley		Guilford

Nov., 1924	Nov. 1925
---------------	--------------

State total	74	Meriden (C)	
Last week	53	New Haven	3
		Seymour	

\*The Median Endemic Index is obtained by arranging in arithmetical sequence the monthly totals of reported cases for the past five years and selecting the middle figure. The numbers in parentheses after the name of each city and town indicate the median endemic index for that city or town; the numbers without parentheses indicate the cases reported during the current month.

The following diphtheria bacilli carriers were

DISEASES REPORTED FOR THE WEEK ENDING

DECEMBER 13, 1924

reported:		West Haven	
Hartford	5	New London County	
New Britain	2	Norwich (C)	
New Haven	2	Norwich (T)	
New London	1	Windham County	
Norwalk	22	Putnam (C)	
Simsbury	23		
Waterbury	2	State total	14
		Last week	10

### *Typhoid Fever*

Fairfield County	1	Measles
Fairfield	1	Fairfield County
Stamford (C)	1	Bridgeport
Middlesex County	1	Stamford (C)
Durham	1	New Haven County
New Haven County	2	New Haven
New Haven		
State total	5	State total
Last week	9	Last week



<b>Whooping Cough</b>		State total	46
Fairfield County		Last week	54
Greenwich	1		
Stamford (C)	3	<i>Other Communicable Diseases</i>	
Hartford County			
Bristol	2	Chickenpox	50
East Hartford	2	Dysentery (bac.)	3
Hartford	3	Encephalitis epid.	3
New Britain	2	German measles	24
West Hartford	1	Influenza	4
Middlesex County		Mumps	11
Portland	1	Pneumonia (lobar)	28
New Haven County		Septic sore throat	2
New Haven	10	Tetanus	1
North Haven	1	Tuberculosis (pul.)	21
Waterbury	2	" (other forms)	4
New London County		Chancroid	1
New London	18	Gonorrhea	25
	—	Syphilis	37

## RHODE ISLAND STATE BOARD OF HEALTH

CONTAGIOUS DISEASES REPORTED FOR THE WEEK ENDING  
NOVEMBER 22, 1924

<b>Diphtheria</b>		Bristol	1
Cranston	2	Johnston	1
Pawtucket	5	East Providence	5
Providence	7	Warren	1
Cumberland	1		—
	15		19
		<b>Measles</b>	
<b>Whooping Cough</b>		Pawtucket	2
Providence	7	Providence	1
		<b>Scarlet Fever</b>	
		Chickenpox	
Cranston	3	Providence	3
Pawtucket	3	Pneumonia	
Providence	5	Providence	1

CONTAGIOUS DISEASES REPORTED FOR THE WEEK ENDING  
NOVEMBER 29, 1924

<b>Diphtheria</b>		<b>Scarlet Fever</b>	
Central Falls	3	Central Falls	3
Cranston	1	Cranston	2
Newport	1	Pawtucket	4
Providence	7	Providence	9
Cumberland	1	Woonsocket	4
Scituate	1	Barrington	1
	—	Cumberland	1
	14	East Providence	4
		Warren	2
		Westerly	1
<b>Smallpox</b>			—
Bristol	2		31
		<b>Measles</b>	
		Pneumonia	
Pawtucket	3	Providence	1
Providence	1	Chickenpox	
		Typhoid Fever	
		Providence	4
Providence	3	Hopkinton	4

## MAINE STATE DEPARTMENT OF HEALTH

INFECTIOUS DISEASES REPORTED FOR THE WEEK ENDING  
DECEMBER 6, 1924

<b>Chickenpox</b>		Portland	24
Ashland	1	Norway	2
Bangor	4	Sanford	1
Bath	2	Waterville	17
Brunswick	6	Winslow	1
Farmington	2		—
Lewiston	3		—
Parkman	1		64

<b>Diphtheria</b>		<b>Scarlet Fever</b>	
Anson	2	Albion	1
Auburn	1	Anson	1
East Livermore	3	Auburn	1
Fort Fairfield	1	Augusta	1
Lewiston	1	Belfast	1
Madison	1	Biddeford	3
Portland	3	Brewer	1
Rumford	1	Calais	4
Westbrook	2	Damariscotta	2
	—	Hallowell	2
	15	Harpwell	1
		Hartford	1
<b>German Measles</b>		Lewiston	4
Mexico	1	Madison	1
Portland	1	Milford	1
	—	Newcastle	1
	2	Nobleboro	2
		Old Town	1
<b>Gonorrhea</b>		Orono	2
Alfred	1	Parkman	1
Biddeford	1	Peru	1
Fort Fairfield	1	Presque Isle	1
Lewiston	1	Richmond	7
Mechanic Falls	1	Rumford	2
Portland	1	Waldoboro	2
Sherman	1	Westbrook	4
	7		49
<b>Influenza</b>		<b>Septic Sore Throat</b>	
Auburn	1	Eastport	2
		<b>Syphilis</b>	
<b>Measles</b>		Bryant's Pond	1
Ellsworth	3	Camden	1
Lewiston	1	Kennebunk	1
Mount Desert	4	Lubec	1
	—	Portland	9
	8	Tarrantine	2
		Van Buren	1
<b>Mumps</b>			16
Albany	4		—
Auburn	2	<b>Tuberculosis</b>	
Bangor	5	Bangor	2
Biddeford	2	Bingham	1
Caribou	14	Brunswick	1
Harpwell	16	Dexter	1
Lewiston	1	Dover-Foxcroft	2
Portland	43	Eastport	1
Waterville	6	Fort Fairfield	1
	—	Lewiston	4
	93	Madison	2
		Presque Isle	1
<b>Pneumonia</b>		St. Albans	1
Atkinson	1	Waterville	3
Bangor	2	West Lubec	1
Bridgton	1	Wilton	1
Fort Fairfield	1	Turner	1
Hallowell	4		—
Littleton	1		23
Madison	1	<b>Typhoid Fever</b>	
Portland	1	Anson	1
Union	1	Portland	1
	—	Presque Isle	1
	13		—
<b>Poliomyelitis</b>		<b>Vincent's Angina</b>	
Portland	2	Houlton	1
Weld	1	<b>Whooping Cough</b>	
	3	Biddeford	7

## NEWS ITEMS

## COURSE IN NUTRITION

A new course in NUTRITION is to be given this year in the Harvard School of Public Health

by Dr. Lawrence Fairhall. This course comes Monday, Wednesday and Friday afternoons at 3 during the months of January and February.

#### HARVARD MEDICAL SCHOOL NOTES

##### PRESIDENT LOWELL'S RECEPTION ON CHRISTMAS EVE

President and Mrs. Lowell have invited all students in the University to their house, 17 Quincy St., on Christmas Eve, 8 to 10 P. M.

##### CHRISTMAS PARTY

The Wives of the members of the Aesculapian Club entertained the Harvard Medical Students at a Christmas party and dance on Saturday evening, Dec. 20th.

##### CAUGHT AND CONVICTED

Dr. Alfred B. Shea once previously convicted and several times suspected of performing abortions, has been again convicted and sentenced to serve from eight to ten years in State prison.

After being convicted of this crime several years ago Shea was pardoned by a tender hearted governor after serving a very short part of his sentence. Since he is now nearly seventy there is little likelihood of a repetition of his criminal practice.

DR. FRANKLIN H. PERKINS has recently announced the transfer of Hillbrow School from Newton to Lancaster, Mass., where it occupies the Iver Johnson estate of sixty acres and is known as The Perkins School of Adjustment! Dr. Perkins, prior to his connection with Hillbrow School, was associated with Dr. Geo. L. Wallace as Asst. Supt. of the Wrentham State School, and will carry on at Lancaster special work with mentally retarded children.

##### NEWS ITEM FROM THE ROCKEFELLER INSTITUTE

A PORTRAIT bust of Dr. Simon Flexner, Director of the Rockefeller Institute for Medical Research, was presented to Dr. Flexner on Saturday evening, December 13th, 1924, at a dinner held at the Ambassador Hotel, New York City. The bust is by the Russian sculptor, Konenkov.

The presentation was made by a group of friends of Dr. Flexner in appreciation of his influence in the medical and allied sciences; and the dinner was attended by about two hundred persons. Addresses were made by Mr. John

D. Rockefeller, Jr., Dr. Phoebus A. Levene, Professor Augustus Trowbridge, and Professor T. H. Morgan; Dr. Frederick Peterson read an appreciative poem, and the address of presentation was made by Dr. William H. Welch. Mr. Raymond B. Fosdick acted as toastmaster.

##### REPORTS AND NOTICES OF MEETINGS

##### MEDICAL STUDENTS ADDRESSED BY DR. ELIOT

DR. CHARLES W. ELIOT, President Emeritus of Harvard University, addressed the students at Harvard Medical School on Monday, Dec. 15th. The meeting was held under the auspices of the Medical Committee of the Phillips Brooks House Association.

Dr Eliot spoke on the subject of "Public Health Service." He gave some very interesting comparisons of medical education in its present status with that in 1869 when he became President. He particularly emphasized the advances that have been made in preventive medicine and the increasing attention that is being paid to this side of medical practise. In this field he saw great opportunities for real service and satisfactory life work.

With increasing demands on medical students there is greater danger of overwork. Dr Eliot said that the students themselves must guard against this danger, by not allowing work to pile up and by being careful not to enter too many fields of study at once.

##### MEETING OF THE GREATER BOSTON MEDICAL SOCIETY

A REGULAR meeting of the Society was held at the Elysium Club, Boston, on Tuesday evening, December 9, 1924. The following program was given by members of the Beth Israel Hospital Staff. About two hundred physicians and medical students attended.

1. Dr. Abraham Myerson (In collaboration with Drs. R. Halloran and Henry Hirsh)  
Subject: "Carotid and Internal Jugular Puncture."
2. Dr. Wyman Whittemore  
Subject: "Suppurative Pericarditis."
3. Dr. Harry Linenthal  
Subject: "Post-operative Pnumonia."
4. Dr. Roger I. Lee  
Subject: "Atypical Leukemias."
5. Dr. E. G. Crabtree  
Subject: "Report on the Prostatic Surgery at the Beth Israel Hospital."
6. Dr. Milton J. Rosenau  
Subject: "Infantile Paralysis."
7. Dr. Hyman Morrison  
Subject: "Cases of Diabetes Mellitus and Malignant Disease during the Summer Service at the Beth Israel Hospital."

Discussion was opened by Drs. Edwin A. Locke and Frederick J. Cotton.

The next meeting will occur January 12, 1925. Program will be announced in our issue of January 8.

#### BEVERLY HOSPITAL

A DEMONSTRATION clinic was held at the Beverly Hospital, Tuesday, December 16th, at 4:00 P. M. The following cases were shown and discussed by Dr. Peer P. Johnson, Surgeon in Chief:—

- Caruncle of back.
- Acute Lymphangitis of hand.
- Ulcer of stomach.
- Tetanus.
- The following cases were discussed by Dr. Clifton Buck of the Medical Staff:
  - Pernicious anæmia.
  - Obesity, Myocarditis and Nephritis.
- Doctors were present from the surrounding cities and towns.

#### LAWRENCE GENERAL HOSPITAL

THE Monthly Clinical Meeting of the Lawrence General Hospital was held on Tuesday, Dec. 9, at 8:30 p. m., in the Nurse's Home.

Dr. Chadwick, Supt. of the Tuberculosis Hospital in Westfield, gave a talk on "The Diagnosis of Tuberculosis in Childhood," with demonstrations of clinical cases and X-ray pictures.

#### THE LAWRENCE MEDICAL CLUB

THE Monthly Meeting of the Club was held Nov. 24, with Roy V. Baketel, M.D., at Red Tavern, Methuen. Chairman for the evening, J. Forrest Burnham, M.D. Subject: "Some Obstetric Complications." Robert L. DeNormandie, M.D., of Boston. This was a very interesting and instructive paper.

#### CHILDREN'S HOSPITAL

At the clinical staff meeting of the Children's Hospital on December 12 the following cases were presented:

Advanced Rickets, Fractured Femur, Coxa Plana, Dr. R. B. Osgood; Chronic Intestinal Indigestion, Dr. K. D. Blackfan; Renal Infantile, Dr. Luther; Teratoma, Dr. G. D. Cutler; Pyelonephritis, Dr. W. E. Ladd; Obstruction of Common Duct, Dr. J. S. Stone.

#### UNITED STATES CIVIL SERVICE EXAMINATION

##### MEDICAL INTERNE (PSYCHIATRIC)

Applications for medical interne (psychiatric) will be rated as received until June 30, 1925. The examination is to fill vacancies in St. Elizabeth's Hospital, Washington, D. C., at an entrance salary of \$1860 a year.

Applicants must have been graduated from a recognized medical college or be senior students in such

an institution, and furnish proof of graduation within eight months from the date of making oath to the application. Applicants must not have been graduated prior to the year 1920 unless they have been continuously engaged in hospital, laboratory, or research work along the lines of neurology or psychiatry since graduation.

Competitors will not be required to report for examination at any place, but will be rated on their general education, technical training, and experience.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the Board of United States Civil Service Examiners at the postoffice or custom house in any city.

#### SOCIETY MEETINGS

##### Essex North District Medical Society

January 7, 1925. Semi-annual meeting at Haverhill.  
May 4, 1925. Annual meeting at Lawrence.

##### Franklin District Medical Society

The meetings of the Franklin District Medical Society will be held on the second Tuesday of January, March and May.

##### Hampden District Medical Society

Meetings to be held on the third Tuesday of January and the third Tuesday in April.

##### Hampshire District Medical Society

The meetings will be held the second Wednesday of November, January, March and May.

##### Middlesex East District Medical Society

Wednesday, January 21. Harvard Club. Dr. Franklin K. White, "Diagnosis of Gall-Bladder Disease."  
Wednesday, March 18. Harvard Club. Dr. John H. Cunningham, "Urinary Retention: Its Significance and Treatment."  
Wednesday, April 15. Harvard Club.  
Wednesday, May 13. Colonial Inn, North Reading.

##### Middlesex North District Medical Society

January 28, 1925.  
April 29, 1925.

##### Middlesex South District Medical Society

Winter Schedule—The plans for winter meetings of the Society include the stated meetings in October and April, two hospital meetings, and five meetings to be held in conjunction with the Suffolk District Medical Society and the Boston Medical Library (two surgical, two medical, and one general).

##### Norfolk District Medical Society

January 27, 1925. Masonic Temple. Subject: "Some Trends of Medical Teaching and Medical Practice." Speakers: Drs. A. S. Begg and W. P. Bowers.  
February 24, 1925. Masonic Temple. Subject: "The Need of Periodical Physical Examinations and How to Make Them." Speaker: Dr. Francis H. McCrudden. A second speaker will be selected to present another subject at this meeting.  
March 31, 1925. Tufts College Medical School. This meeting given over to Drs. Leary and Watters for the purpose of giving us a medical examiners' talk.

##### Norfolk South District Medical Society

Meetings will be held the first Thursday of each month from October to May, inclusive, at 12 noon, at the Norfolk County Hospital, South Braintree.

##### Suffolk District Medical Society

December 17. Medical Section, in association with the Middlesex South District Medical Society. "The Newer Drug Treatment of Heart Disease." Dr. Paul D. White.  
January 28. General meeting, in association with the Boston Medical Library and the Middlesex South District Medical Society. "Some Experiences of a Medico-legal Pathologist" (latter slides). Dr. George B. Marzath.  
February 25. Surgical Section, in association with the Middlesex South District Medical Society. "Pyelonephritis." Dr. Arthur H. Crooble.  
March 25. Medical Section, in association with the Middlesex South District Medical Society. "The Treatment of Pneumonia." Dr. Edwin A. Locke.  
April 19. Annual meeting. "Hypertension and Longevity." Dr. Harold M. Frost.

##### Worcester District Medical Society

January 7, 1925. Surgical meeting. Place, subject and speaker to be announced.  
February 11, 1925. Memorial Hospital, Worcester. Papers will be read by the members of the hospital staff.  
March 11, 1925. St. Vincent's Hospital, Worcester. Papers will be read by the members of the hospital staff.  
April 9, 1925. Subject and speaker to be announced.  
May 14, 1925. Annual meeting.

# THE BOSTON Medical and Surgical JOURNAL

Owned and Published by the MASSACHUSETTS MEDICAL SOCIETY

OFFICIAL ORGAN OF THE NEW ENGLAND SURGICAL SOCIETY, AND OF THE BOSTON SURGICAL SOCIETY, INC.

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Published Weekly in Boston  
at 126 Massachusetts Avenue

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## Now Ready—The New Mayo Clinic Volume

This new volume from The Mayo Clinic and The Mayo Foundation is one of the most practical volumes of the series. The surgery here detailed is not the surgery of theory but the surgery of practice in the amphitheatre. But this volume is not all surgery, not by any means. There is very much in it of definite value to the *general practitioner*. Take, for instance, the series of articles on *insulin*. There is one on clinical observations during the use of insulin; there is another on the action of insulin in the utilization of sugar in the body; there is another on the treatment of emergencies in diabetes, and an outstanding one entitled, "How is the Overworked General Practitioner to Use Insulin?" This latter goes thoroughly, and in detail, into everything the general practitioner must know in order to use insulin safely. It gives the effect of overdosage, and insulin shock; it gives the requirements for the successful use of insulin, the right procedures for adult patients, diabetic diet tables, insulin treatment of diabetes in children, giving dosage, diets, and everything necessary to the management of the case. It takes up the treatment of infections complicating diabetes and the treatment of diabetic acidosis and coma.

Then there is an article on the value of *insulin in surgery*, pointing out how insulin properly used will permit operations on diabetics which before were contraindicated. And so on through nearly 1400 pages of practical material for surgeon and general practitioner. It is our sincere conviction that this is the most practical volume in The Mayo Clinic series.

Collected Papers of The Mayo Clinic and The Mayo Foundation. By WILLIAM J. MAYO, M.D., CHARLES H. MAYO, M.D., and their Associates at The Mayo Clinic, Rochester, Minnesota, and The Mayo Foundation, University of Minnesota. Octavo of 1277 pages, with 410 illustrations. Cloth, \$12.00 net.

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## THE JOURNAL would like to buy:

January 3, 1924, 5 copies  
February 14, 1924, 5 copies  
May 23, 1924, 5 copies

We will pay 20c for these copies of the Journal. After we have received the desired number of each issue we shall be obliged to return any extra numbers sent us.

Mail to Boston Medical and Surgical Journal, 126 Massachusetts Ave., Boston.

This notice voids all previous notices of Journals wanted.

## Weed Hay Fever

GIANT RAGWEED *Ambrosia trifida*

THE Late Summer and Early Autumn Type of Hay Fever is caused by many of the common weeds, as—Ragweed, Russian Thistle, Sage Brush—the species differing widely according to locality. To assure specific treatment diagnostic tests are essential. To assure preseasonal treatment early diagnoses should be made, otherwise the less desirable, though often beneficial, coseasonal treatment will be involved. List of late flowering weeds, showing regional distribution and time of pollination, sent on request.

RUSSIAN THISTLE *Salsola pestifer*SAGE BRUSH *Artemisia tridentata*

The Arlington Chemical Company  
Yonkers, New York



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## Norris and Landis' Chest Diseases JUST READY 3rd EDITION

The revision for this new edition has been heavy, some parts of the work having been entirely rewritten. A great deal of new matter has been added and that already included has been brought right down to date.

Included in the new material are shallow breathing, cyanosis, cyanosis in pneumonia, heart pain. The section on "effort syndrome" has been virtually rewritten with the addition of a section on *vagus* pressure. The section on the electrocardiograph has been so thoroughly revised that it, too, is virtually new. There have been added sections on electrical axis of the heart and acute dilatation and terminal arrhythmias. The entire section under symptoms, physical signs and diagnosis of pulmonary embolism has been rewritten, with the inclusion of a new section on fat embolism and air embolism.

There is a new section on arteriosclerosis and on thrombosis of the pulmonary artery. There is a new section on rupture of the heart, another on tuberculosis of the heart, another on tumors of the heart, another on coronary thrombosis covering several pages and including etiology, pathology, symptoms, physical examination and differential diagnosis. There is a new section on mycotic or bacterial aneurisms, aneurisms in young children and adolescents and a section on diseases of the trachea.

To the monograph on tuberculosis has been added a new section on abortive tuberculosis.

You will see from this that the revision has indeed been a thorough one, that nothing has been omitted which in the long experience of the authors gives promise of help to the general practitioner, and that in this new (3rd) edition the medical profession has a work noteworthy for completeness, up-to-dateness, and authenticity.

*Diseases of the Chest and Physical Diagnosis.* By GEORGE W. NORRIS, M.D., Professor of Clinical Medicine at the University of Pennsylvania; and H. R. M. LANDIS, M.D., Director of the Clinical and Sociological Departments of the Henry Phipps Institute, University of Pennsylvania. Octavo of 907 pages, with 413 illustrations, some in colors. Cloth, \$9.50 net.

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The Arlington Chemical Company  
Yonkers, New York

# THE BOSTON Medical and Surgical JOURNAL

Owned and Published by the MASSACHUSETTS MEDICAL SOCIETY

OFFICIAL ORGAN OF THE NEW ENGLAND SURGICAL SOCIETY, AND OF THE BOSTON SURGICAL SOCIETY, INC.

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## Graves' Successful Gynecology

It is impossible in this space to enumerate all the changes made by Dr. Graves in the new (3rd) edition of his work on *Gynecology*. Among the important ones are: The rewriting of the section on Ovarian Tumors, to bring it into accord with the work of Dr. John A. Sampson in this field; Implantation Tumors of the Ovary; Histogenesis of Ovarian Dermoids; Sturmdorf Operation for Chronic Endocervicitis; Operation for Cystocele (Ward's method); Operation for Prolapse of Urethral Mucous Membrane; Operation for Tubal Sterilization. These, and other additions, have increased the size of the work by 51 pages. New illustrations number 45.

Graves' *Gynecology* has enjoyed a large usefulness among gynecologists, surgeons, and practitioners, because it is so complete, so clear, and so excellently illustrated. More than 500 pages of the work are devoted to non-operative treatment and information of decided help to the general practitioner. The operative technic is all segregated in one section. Graves' *Gynecology* is well worth consideration by every physician and surgeon.

Octavo of 928 pages, with 534 illustrations, 103 in colors. By WILLIAM F. GRAVES, M.D., Professor of Gynecology at Harvard Medical School. Cloth, \$9.00 net.

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## NOTICE

Beginning August 22, 1924, engravings will not be retained more than six months after date of publication.

# Weed Hay Fever



GIANT RAGWEED *Ambrosia trifida*

THE Late Summer and Early Autumn Type of Hay Fever is caused by many of the common weeds, as—Ragweed, Russian Thistle, Sage Brush—the species differing widely according to locality. To assure specific treatment diagnostic tests are essential. To assure pre-seasonal treatment early diagnoses should be made, otherwise the less desirable, though often beneficial, coseasonal treatment will be involved. List of late flowering weeds, showing regional distribution and time of pollination, sent on request.

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## JUST READY

# New Edition of De Lee's Obstetrics

The revision for this new edition has been the heaviest the work has undergone. Notwithstanding the elimination of much obsolete material and the striking out of numerous illustrations, the text has been increased to 1123 pages and the illustrations to 1128, of which 201 are in colors. The treatment and causation of eclampsia has been thoroughly revised; the section on prenatal care has been rewritten. The section on the endocrines includes the latest developments; the technic of the prevention of mild infections has been elaborated; there are many important additions to the sections on hyperemesis gravidarum, abruptio placentae, syphilis, heart disease, and operative obstetrics. Of unusual importance is the beautifully illustrated technic of the new supra-symphyseal cervical cesarean section—now the operation of choice.

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